GlobalControl IP

Installation and user manual

Ident. Nr.: 8706042

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C 1 General Information

C 1.1 Identification

Manufacturer: ..... TLS Communication GmbH
Marie-Curie-Straße 20
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Product:.....GlobalControl IP
Version:..... 1.0
Installation and user manual:.....State 03/12
File edition:..... 8706042_0312.doc
Ident. No.: 8706042

These operating instructions are a part of this product. They contain important notes on handling the device. Please remember this also if you pass on the device to third parties. Keep these operating instructions for further reference.

Imprint

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C 1.2 Scope of delivery

Consisting of:

GlobalControl IP	Ident. No.:
1 x GlobalControl IP Standard	8640100
1 x SD memory card	8706094
1 x Mains adaptor 7,5V/2,93A	8706095
1 x Installation and user manual	8706042
1 x Cable GlobalControl Serviceport 1,5m	8706062

Optional:

1 x GlobalControl IP KNX GSM	8640105
1 x SD memory card	8706094
1 x Mains adaptor 7,5V/2,93A	8706095
1 x Installation and user manual	8706042
1 x Antenna	8706366
1 x Cable GlobalControl Serviceport 1,5m	8706062

C 1.3 Technical data

External power supply: ..... 90-264 VAC, 47-63 Hz
..... auf 7,5 VDC / 2,93 A
Switching outputs max.: ..... 30 V / 300 mA
Connections: .....
Inputs: ..... 5 x ext. input (2+5 pin Phoenix m)
..... 2 x analogue input (5 pin Phoenix m)
..... for 1 x temperature input for PT100
..... and 1 analogue input
..... 5 x signal recognition (RJ10 f)
..... 1 x SD memory card-slot
Outputs: ..... 5 x ext. output (2+5 pin Phoenix m)
.....2 x IR (2x2 pin Phoenix m)
(Ident. No.: 8640100)..... 2 x RS232 (2 x 3 pin Phoenix m)
(Ident. No.: 8640105)..... 1 x RS232 (3 pin Phoenix m)
(Ident. No.: 8640105).....1 x KNX (2 pin Phoenix m)
(Ident. No.: 8640105)..... 1 x SIM card-slot
(Ident. No.: 8640105)..... 1 x GSM
.....1 x LAN (RJ45 m)
Weight:..... 590 g
Dimensions (D/H/W): ..... 138 x 42 x 150 mm

C 1.3.1 PC system requirements

- Computer with JavaScript-enabled Web browser
- LAN, WLAN network connection

C 1.4 Environmental conditions

Operating temperature:..... +5°C bis +40°C
Rel. humidity: ..... Max. 85%
Atmospheric pressure:..... 600 to 1000 hPA

C 1.5 In case of damage in transport

In case of transport damage, please observe the following:

- Do not change the goods and the packaging in any way.
- Let the deliverer sign for the damage.
- Do not use the damaged device.
- In case of delivery by a forwarding agent or parcel service, please notify us of the damage telephonically or in writing within 5 calender days.
- Do not return the device without prior consultation!
- Please note that we only accept returned goods if agreed to accept the return in advance.
- Non-compliance with these regulations invalidates any claim for compensation!

The following regulations and safety notes regarding installation and maintenance must be observed:

C 1.6 Standards and regulations

VDE 0100 Regulations for erection of power installations for rated voltages below 1000V.

VDE 0105 Operating power installations, general stipulations.

EN 60335-1 Safety of household and similar electrical appliances.

C 1.7 General safety notes

This operating instructions contains basic notes to be observed when operating **TLS GlobalControl IP**. Follow the instructions closely to avoid errors. It is therefore imperative to read these operating instructions before working with **TLS GlobalControl IP**.

The safety notes contained in these instructions that result in hazards to persons unless observed, are indicated by the

Safety symbol in acc. With DIN 4844-W8 and the word “Danger”.

Work on electrical components or component groups may only be performed by a qualified electrician in acc. with electrical regulations (e.g. EN 60204, DIN VDE 0100/0113/0160).

Plug connections and cables may be destroyed. Connect plugs and sockets without using force. Do not kink cables when laying; lay with an adequate radius (R>5 x cable diameter).

Screws, bolts and threads may be damaged. Use suitable tools to loosen screws and bolts.

Use device indoors only, i.e. not in open air. Never expose the device to moisture!

C 1.8 Assembly notes

Danger
Before starting any work, unplug all devices / equipment / areas and secure against accidental re-connection.

C 1.9 Warranty

TLS warranty for **TLS GlobalControl IP** is 36 months. Damages arising from improper operation or through use of force are not covered by this warranty. The warranty is invalidated if unauthorised persons open the device.

C 1.10 Safety

Danger
Voltage and current fluctuations when connecting the **TLS GlobalControl IP** may damage electronic components. Connect all inputs and outputs before connecting the power supply.

Danger
Allow technical staff only to connect the device. (e.g. EN 60204, DIN VDE 0100/0113/0160)

Danger
Electrical shocks from the power supply units may be fatal or lead to grave injury to health. Never open the housing of the **TLS GlobalControl IP**.

C 2 Application area and intended use

TLS GlobalControl IP is a web-based control system for the global administration, monitoring and control of an unlimited number of conference rooms and objects.

TLS GlobalControl IP with LAN connection comprises interfaces for GSM, KNX (Ident. No.: 8640105), RS232, IR, analogue access and signal detection.

As an open system, **TLS GlobalControl IP** supports all normal switching programmes, touch panels and all control-capable devices in the media, building and industrial technology fields.

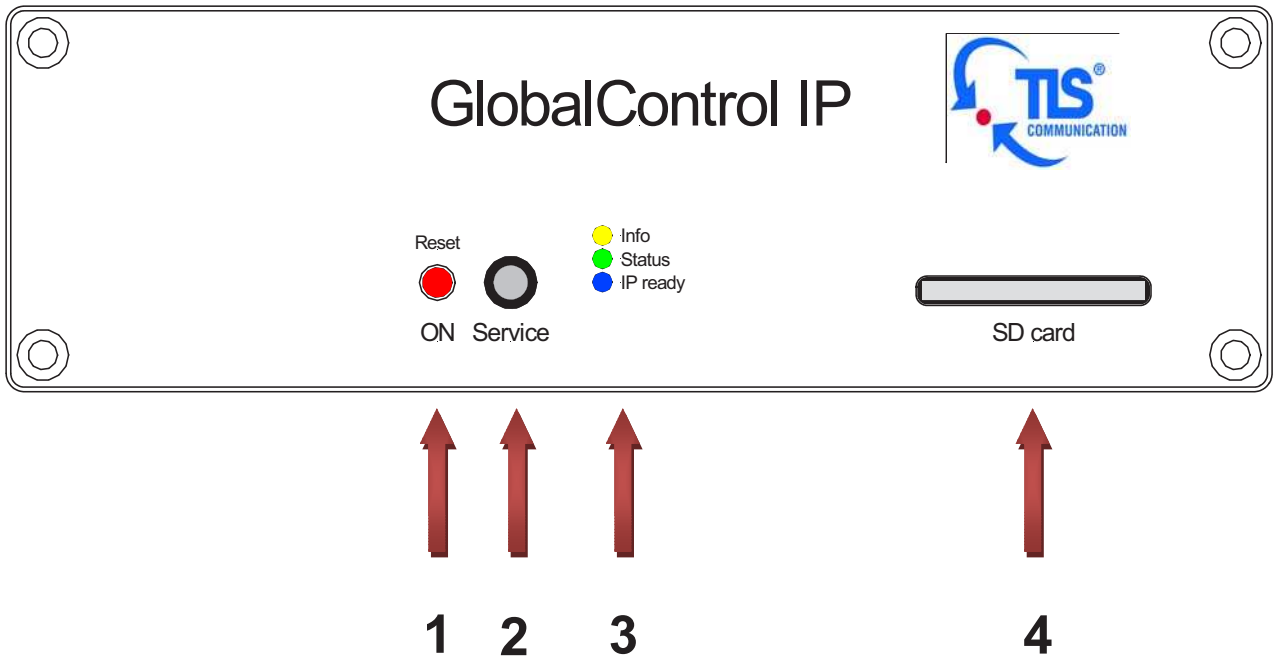
TLS GlobalControl IP communicates via LAN – be this copper-wired, glass fibre or W-LAN. As a result, no special bus or cabling is required.

GlobalControl IP is operating system-independent, and thus compatible with all modern communications equipment. The user can thus ensure control and management by means of any internet-capable computer, smartphone, WebPad, touch panel, i-device or mobile phone.

C 3 Device display/housing

C 3.1 Front view (Ident. No.: 8640100)

Sketch 1



1. ON/Reset Red indicator light and device reset button

2. Service RS232 port for service technicians for the setting of basic functions

3. Information display

a. Info
Information display for errors that have occurred

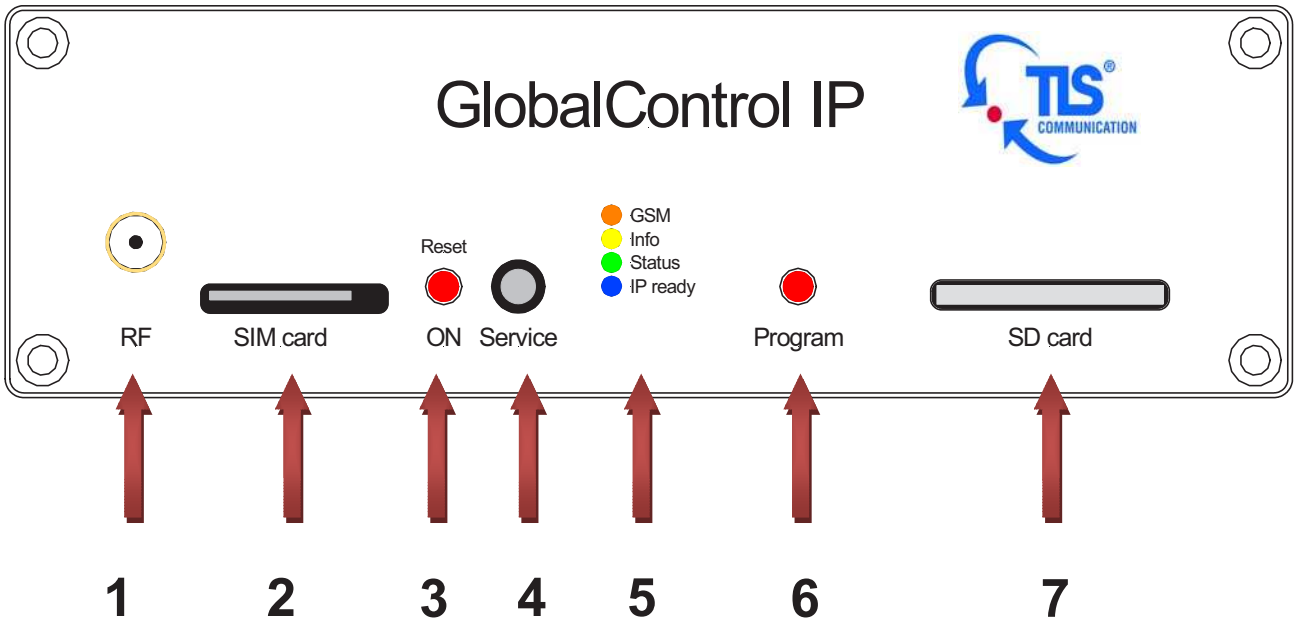
b. Status
Information display for existing IP address

c. IP ready
Status display for processing of device commands and usage

4. SD card Card slot for storage media

C 3.2 Front view (Ident. No.: 8640105)

Sketch 2



1. RF Antenna terminal for data receipt and receipt across a mobile radio network

2. SIM card Card slot for smart card for identifying the user on the mobile radio network

3. ON/Reset Red indicator light and device reset button

4. Service RS232 port for service technicians for the setting of basic functions

5. Information display

a. GSM
GSM module status display

b. Info
Information display for errors that have occurred

c. Status
Information display for existing IP address

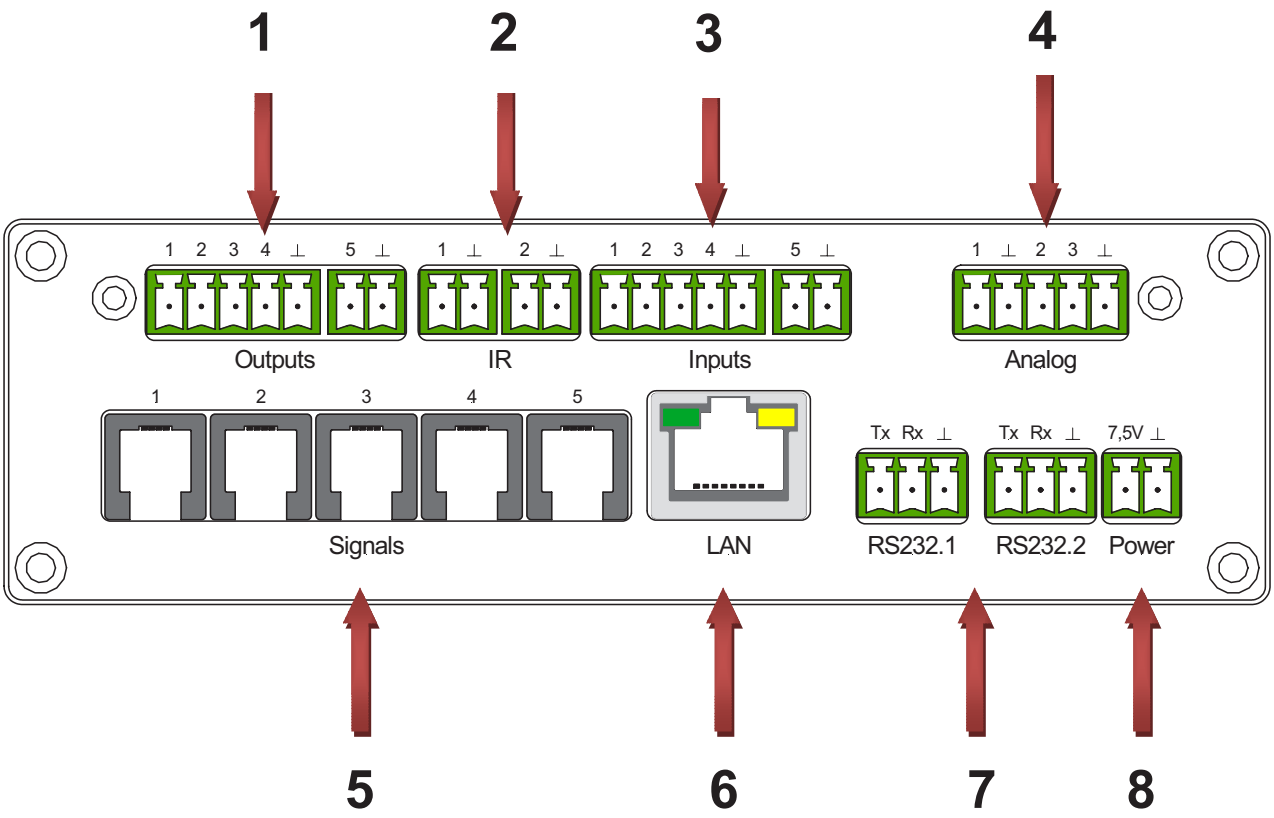
d. IP ready
Status display for processing of device commands and usage

6. Program KNX programme display and KNX programme button

7. SD card Card slot for storage media

C 3.3 Rear view (Ident. No.: 8640100)

Sketch 3

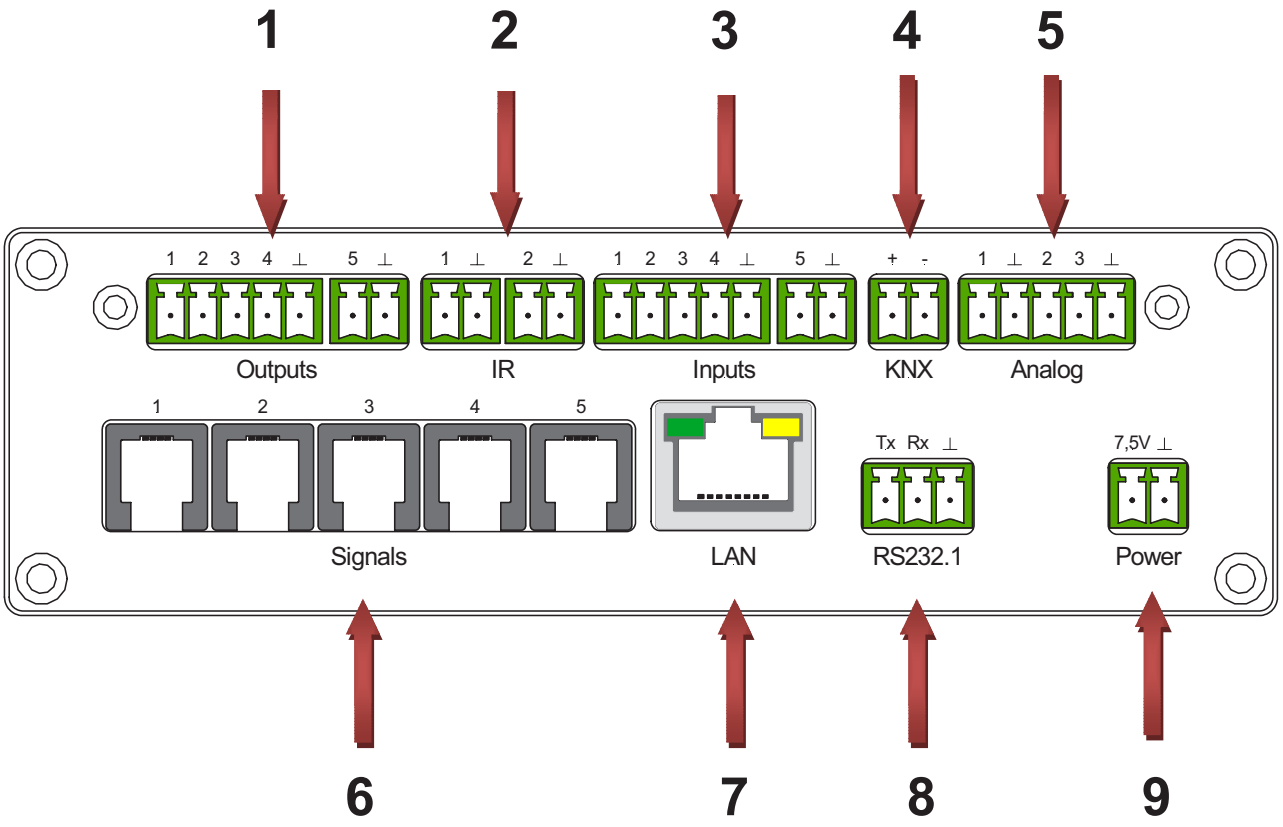


1. **Outputs** — 5 Outputs for connecting external output components
2. **IR** — 2 Infrared outputs for output of infrared codes
3. **Inputs** — 5 Inputs for connecting external input components
4. **Analog** — 2 Analogue inputs for determining analogue values
5. **Signals** — 5 Signal in- and outputs including power supply for signal detection module

6. LAN	Network interface, for connection to computer network
7. RS232	2 bi-directional, serial interfaces
8. Power	Power supply

C 3.4 Rear view (Ident. No.: 8640105)

Sketch 4



1. Outputs	5 outputs for connecting external output components
2. IR	2 infrared outputs for outputting infrared codes
3. Inputs	5 inputs for connecting external input components
4. KNX	Bi-directional bus connection for KNX driven components
5. Analog	2 Analogue inputs for determining analogue values
6. Signals	5 Signal in- and outputs including power supply for signal detection-module
7. LAN	Network interface, for connecting to a computer network
8. RS232	Bi-directional, serial interface
9. Power	Power supply input

C 4 Device installation / cabling

Danger!
Voltage and current fluctuations when connecting the **TLS GlobalControl IP** may damage electronic components.

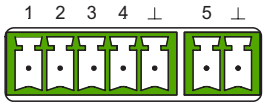
Connect all inputs and outputs of **GlobalControl IP** before connecting the power supply.

Electrostatically endangered components ESD!
Electrostatic discharges can cause damages in integrated circuit devices!

Avoid direct contact of single connection contacts of **GlobalControl IP**! If this is not possible, please at least ensure before touching, that you are not electrostatically charged. By touching grounded metal parts, electrostatic energy can be diverted.

It should furthermore be ensured, that there is no recharge.

C 4.1 Connecting the switching inputs



Inputs

The **GlobalControl IP** has 5 inputs. The inputs are subdivided into 2 connectors; the first four inputs with a single ground potential on a single connector and the fifth input with a single ground potential on a separate connector. Connecting an input with the ground potential triggers an input impulse.

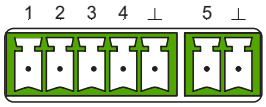
The ground potential is defined by Potential 0 Volt and is the reference potential for all impulse and operating voltages. The electrical potential is a voltage specification which references a fixed reference point.

GlobalControl IP reacts in an edge-controlled manner. Both positive as well as negative edges are in this way detected. A connection to the ground is evaluated in the following programming as “ON”, and a disconnection from the ground as “OFF”.

Parameters for the inputs can be set in Configuration (see C.8.3.1).

The delivery package contains respectively appropriate 5 and 2-pole counterparts. Potential-free buttons, switches, key switches, etc. can be connected to these using appropriate cables.

C 4.2 Connecting switching outputs



Outputs

GlobalControl IP has 5 outputs. The outputs are subdivided into 2 connectors; the first four inputs with a single ground potential on a single connector and the fifth output with a single ground potential on a separate connector.

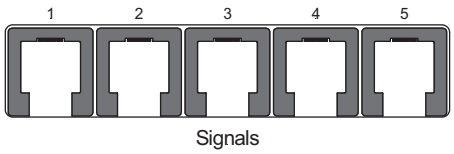
The outputs are Open Drain in design, in order to allow different potentials of up to 30V.

If the outputs are switched on by the programming, there is ground potential at the respective output.

You must ensure that the maximum current of 300mA is not exceeded.

The delivery package contains respectively appropriate 5 and 2-pole counterparts. These can be connected to relay boxes, operating displays, etc. using appropriate cables.

C 4.3 Connecting signal inputs and outputs / Signals



Signals

GlobalControl IP has 5 signal terminals. The signal terminals are designed as four-pole Western plugs (4P4C). These each contain a 5V supply voltage, an input and an output.

The pins are assigned as follows:

1: +5V
2: Ground
3: Input
4: Output

Connecting an input to the ground potential triggers an input impulse.

GlobalControl IP reacts in an edge-controlled manner. In this way, both positive as well as negative edges are detected. A connection to the ground is evaluated in the following programming as “ON”, and a disconnection from the ground as “OFF”.

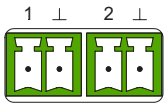
The outputs are Open Drain in design, in order to allow different potentials of up to 30V.

If the outputs are switched on by the programming, there is ground potential at the respective output.

You must ensure that the maximum current of 300mA is not exceeded.

Parameters for the inputs can be set in Configuration (see C.8.3.1).

C 4.4 Connecting infrared outputs



IR

GlobalControl IP has 2 infrared outputs. Up to three infrared emitters can be connected in series to each output.

C 4.4.1 Connecting infrared emitter

Via infrared communication infrared commands are transmitted from **GlobalControl IP** to play-back devices. For this you need an infrared emitter, which is not included in delivery package of **GlobalControl IP**.

- Connect the red/blue marked cable (at TLS types) with screen in a 2pin Phoenix connector included in delivery.
- Then connect the assembled connecting cable of the IR emitter to the terminal block at the IR port (contact terminals **IR-OUT** and **GND**) at the back side of **GlobalControl IP**.
- Please ensure that the red respectively blue marked cable (IR emitter) is connected with the terminal IR and the screen (earth lead) is connected with the terminal GND.
- Then remove the protective film from the IR emitter and connect the emitter at the relevant end devices directly to the infrared receiver. This is usually marked with IR.

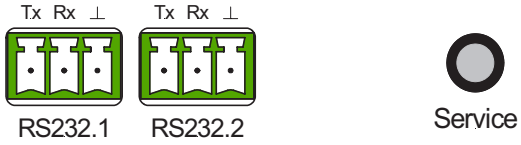
C 4.4.2 Single and/or dual IR emitter

Up to three IR emitter in series can be connected per output. For this a single and/or dual IR emitter is available from TLS (**Ident. No.: 863 0027 (single) / 864 0028 (dual)**).

C 4.4.3 Infrared extension

If you need an extension for the infrared cable, a 2-pole cable with plug and socket is available from TLS..

C 4.5 Connecting serial interface RS232



GlobalControl IP has up to 2 serial bi-directional RS232 interfaces on its rear side and a service interface on its front side. The service interface works using the 115200 8N1 parameters.

The other interfaces can be freely configured.

C 4.5.1 Connecting RS232 cable

RS232 commands are transmitted to the end-devices using RS232 communication. For this, you will need an RS232 interface cable, which is not included in the delivery package for the **GlobalControl IP**.

Communication between **GlobalControl IP** and playback devices can be uni-directional or bi-directional, meaning in a single direction using TxD or in both directions using TxD and RxD.

RxD: Receive (x) Data

TxD: Transmit (x) Data

Two lines for ground and data (send) respectively are used to transfer data from the **GlobalControl IP** to the end-device.

Three lines are used for bi-directional transfers: ground, data (send) and data (receive).

To connect a playback device using the RS232 interface to **GlobalControl IP** for *uni-directional* communication:

- Screw the two lines (TxD and GND) of the RS232 interface cable into one of the 3-pole Phoenix terminals included in the delivery package.

- Connect the thus ready-to-use line with the terminal block to the RS232 port (contact terminals TxD and GND) on the rear side of the **GlobalControl IP**.

- Now connect the other end of the RS232 interface cable to the RS232 input of the playback device.

  When doing this, the TxD data line should be connected to the Rx port (receive port) of the playback device.

To connect a playback device with an RS232 interface to **GlobalControl IP** for *bi-directional* communication:

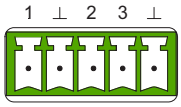
- Screw the three lines (TxD, RxD and GND) of the RS232 interface cable into one of the 3-pole Phoenix terminals included in the delivery package.

- Connect the thus ready-to-use line with the terminal block to the RS232 port (contact terminals TxD, RxD and GND) on the rear side of the **GlobalControl IP**.

- Now connect the other end of the RS232 interface cable to the RS232 input of the playback device.

  When doing this, the TxD data line should be connected to the Rx port (receive port) of the playback device, and the RxD data line to the Tx port (send port).

C 4.6 Connecting analogue inputs



Analog

GlobalControl IP has 2 analogue inputs. A voltage of up to 5V can be connected to Input 1. A percentage evaluation is performed here, such that 0V = 0% and 5V = 100%.

Contacts 2 and 3 are used to connect a temperature-dependent resistance (PT100). Pin 2 has a constant current output of 10mA and Pin 3 is the measurement value input.

If the Pt100 sensor is designed using the two-line method, connections 2 and 3 must be bridged.

The sensor has a working range from 80Ohm to 120Ohm. This is equivalent to a temperature measurement range of -50°C to +50°C.

It may be necessary to calibrate the downstream measurement switch with an offset. To do this, the respective positive or negative offset must be communicated over the service port to the control system (see C. 8.2.1).

C 4.7 Connecting KNX

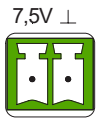
KNX

Program

GlobalControl IP has a KNX bus connector. This can support up to 128 KNX addresses using the integrated KNX module.

There is a programming button and a red LED as a programming display on the rear side to integrate the **GlobalControl IP** into an existing KNX system.
For more information on the integration of the **GlobalControl IP** into a KNX project, please refer to the description of your KNX configuration software.

C 4.8 Connecting power supply



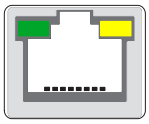
Power

To connect **GlobalControl IP** to the power supply:

- Connect the power adaptor connector cable to the terminal block on the **Power** port (contact terminals **7.5V** and **GND**) on the rear of the **GlobalControl IP**.

GlobalControl IP is powered by an external 7.5V / 2.93A 22W direct current power supply, which is included in the delivery package.

C 4.9 Connecting network


LAN

The network connection is a standard RJ45 network jack. This has a 100 MBit/s transfer rate.

The green LED is only lit when a network cable connection is present. This blinks when data is sent or received.

The yellow LED indicates that a 100 MBit/s configuration has been set. The LED is also lit even when no network connection is present.

GlobalControl IP must be installed in a network in order to be accessible. This requires the relevant access rights to be set up (by the network administrator) and **GlobalControl IP** to be integrated into a local network.

With appropriate internet access, **GlobalControl IP** can be accessed from anywhere around the world.

Connect the GC IP to your local area network (LAN) RJ 45 connector. Connect this to the power adapter.

C 4.10 Connecting storage medium

SD card

GlobalControl IP has an SD memory card slot to accept a digital storage medium which operates on the flash-drive principle.

Any commercially-available SD card can be used. A 2 GB SD card is included in the delivery package.

C 4.11 Connecting GSM

RF SIM card

The SIM card slot (**S**ubscriber **I**dentity **M**odule) is used to accept a chip card to identify a user on the mobile radio network. This card allows mobile radio providers to provide participants with mobile telephony and data connections.

Pin code querying must be disabled on the SIM card. A 50 Ohm antenna must be connected using the RF SMA connector.

Depending on the location of the **GlobalControl IP**, it may be necessary to position the antenna away from the device. An antenna RF 0.8-2.2GHz SMA which can be connected directly to the GlobalControl IP is included in the delivery package.

C 4.12 Control LEDs

GlobalControl IP has 4 coloured indicator lights.

The **GSM** (orange LED) indicator displays the following operating modes (8640105 units only):

- LED *off*: No GSM module present, GSM module not working.

- LED *blinking*: 64ms ON / 800ms OFF: Module cannot detect a radio network

- LED *blinking*: 64ms ON / 3000ms OFF: Module is connected to radio network

The yellow **Info** LED is lit when an error has occurred. The error message can be read under menu item *Error log*.

The green **Status** LED is lit when an IP address has been assigned to the GlobalControl IP. This can be done once on a DHCP server, or by entering a fixed IP address.

The blue **IP ready** LED is lit and/or blinks when the GlobalControl IP is processing a command.

C 4.13 Operation display and Reset

Reset

ON

Only use the Reset button if the GlobalControl IP no longer works properly and no longer reacts to normal inputs. The hardware reset resets the GlobalControl IP to a defined initial state.

An operating system runs on the GlobalControl IP. In the event of a hardware reset, the operating system is no longer able to completely terminate all operations.

Note that all values are lost in a hardware reset! Performed events are cancelled in an uncontrolled manner! Timers and flags are reset to their initial values!

The red LED is lit when a power supply is present. Pressing the Reset buttons resets the control system.

C 5 Initial operation

PC system requirements

In order to start using **TLS GlobalControl IP**, you only need a computer with a JavaScript-enabled Web-Browser such as (Mozilla Firefox, Microsoft Internet Explorer, Opera, Google Chrome, Apple Safari, ...).

Open the browser and enter the IP address which **TLS GlobalControl IP** has been assigned by your network's DHCP server. This IP address can be obtained via the DHCP server.

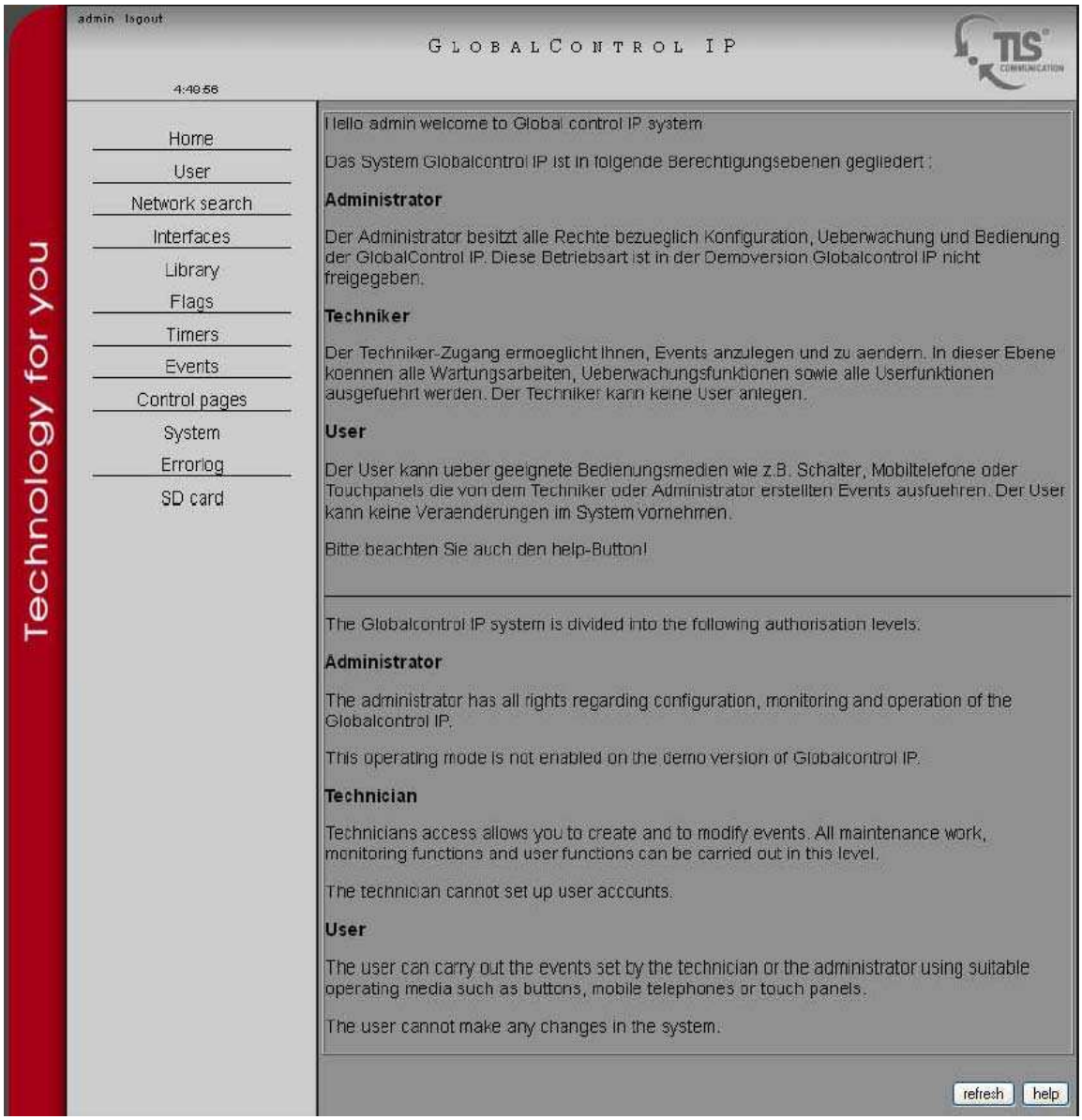
You also have the possibility to obtain the IP address via the Serviceport (see C 4.5 Connecting serial interface RS232).

The following user interface will appear:

Sketch 5

Login requires an appropriate user name and password (during initial installation: Username: admin / Password: admin).
Following a successful login, the system's start page (Home) appears with the appropriate menu items on the left-hand side.

Sketch 6


admin logout
GLOBALCONTROL IP
4:49:56
Technology for you
Home
User
Network search
Interfaces
Library
Flags
Timers
Events
Control pages
System
Errorlog
SD card
Hello admin welcome to Global control IP system
Das System Globalcontrol IP ist in folgende Berechtigungsebenen gegliedert :
Administrator
Der Administrator besitzt alle Rechte bezueglich Konfiguration, Ueberwachung und Bedienung der GlobalControl IP. Diese Betriebsart ist in der Demoversion Globalcontrol IP nicht freigegeben.
Techniker
Der Techniker-Zugang ermoeglicht Ihnen, Events anzulegen und zu aendern. In dieser Ebene koennen alle Wartungsarbeiten, Ueberwachungsfunktionen sowie alle Userfunktionen ausgefuehrt werden. Der Techniker kann keine User anlegen.
User
Der User kann ueber geeignete Bedienungsmedien wie z.B. Schalter, Mobiltelefone oder Touchpanels die von dem Techniker oder Administrator erstellten Events ausfuehren. Der User kann keine Veraenderungen im System vornehmen.
Bitte beachten Sie auch den help-Button!
The Globalcontrol IP system is divided into the following authorisation levels.
Administrator
The administrator has all rights regarding configuration, monitoring and operation of the Globalcontrol IP.
This operating mode is not enabled on the demo version of Globalcontrol IP.
Technician
Technicians access allows you to create and to modify events. All maintenance work, monitoring functions and user functions can be carried out in this level.
The technician cannot set up user accounts.
User
The user can carry out the events set by the technician or the administrator using suitable operating media such as buttons, mobile telephones or touch panels.
The user cannot make any changes in the system.
refresh
help

Following menu items are available for you:

C 5.1 Home

This entry page contains general information on the respective Administrator, Technician and User access levels (Rights for the different user types). Furthermore there is a „Refresh“ and „Help“ button on the bottom right-hand corner.

Furthermore on the left-hand side on the top of the display screen you can see, which ID you have used to log into the system. By clicking Logout you can log out from the system at any time .

Please also make use of the Help buttons under each menu item! These provide useful information on the configuration and use of the GlobalControl IP system.

C 5.2 User

The **User** menu item can only be seen by Administrators. The different users can be managed here.

There are three different kinds of users: User, Technicians and Admin.

- **Users** are end-users who only see the control pages, and are unable to make any changes to the system. On the control pages, users can trigger pre-defined switching processes which are authorised to them or view values and status information which has been configured for them.

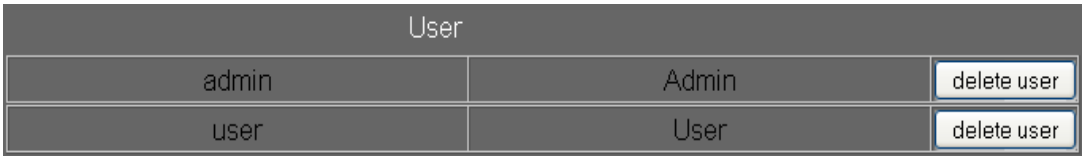
  The User pages are displayed in a visually attractive design. Flags are automatically reloaded on these pages every second.

- The **Technician** holds all rights including Configuration, Monitoring and Control, with the exception of administration rights for new users.

- The **Administrator** holds all rights including Configuration, Monitoring and Control, as well as administration rights for new users.

All created users are listed in tabular form:

Sketch 7



In delivery condition, two users have already been created – a user ‘admin’ with password ‘*admin’* and a user ‘user’ with password ‘*user’*.

A new user can be created by inputting a name, the appropriate user type and a password. The entry is confirmed by pressing the *save* button (see Figure 8).

Special characters cannot be used when inputting a name. Only underscores are allowed (see C 8.5 Character set).

Sketch 8

Users can be simply deleted by pressing the *delete user* button (see Figure 9). When a User-type user is deleted, the associated control page is also deleted.

Sketch 9

Users who are currently logged into the GlobalControl are also listed, together with their appropriate IP numbers.

Logged-in users can also be logged out from here. To do this, press the *log out user* button (see Figure 10).

Sketch 10

When a user is logged in as a User, the browser page is updated every second.

This does not happen when logged in as a Technician or Admin.

The *refresh* button must be pressed to update the current page. When switching to a different menu, an update is performed automatically.

C 5.3 Network search

The **Network search** menu item allows TLS expansion devices (interfaces), which are present on the local network (LAN) to be automatically detected and identified.

The system will indicate which TLS devices are connected to the network. Their name, function as well as serial number are displayed. You will need these to embed the devices using the **Interfaces** menu item (see C 5.4).

Pressing the *scan network* buttons searches for these devices (see Figure 11)

Sketch 11

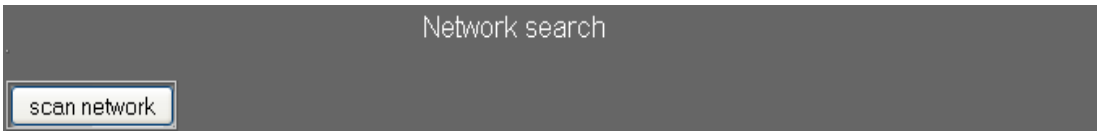


Figure 12 shows a possible result. The TLS expansion devices are delivered in delivery condition with the device name TLSBOX.

In order to ensure better identification, these can also be renamed (to do this, read the appropriate section in the instructions for the interfaces).

Sketch 12

Network search		
11.01.943.0003	TLSBOX	GC_EXT_1RS
08.12.944.0001	TLSBOX	GC_EXT_4RS
10.10.241.0005	TLSBOX	GC_EXT_KNX
08.12.946.0001	TLSBOX	GC_EXT_2IR

The *serial number* of the respective expansion unit (e. g. 11.01.943.0003), which is required in order to embed the device in the system is entered in data field 1.

The *device name* of the respective expansion unit (TLSBOX) is entered in Field 2.

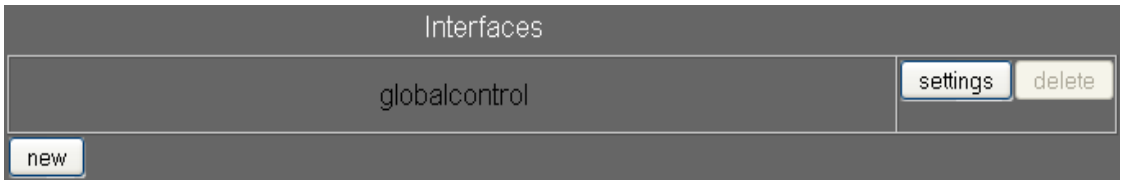
The *device type* is entered in Field 3 (GC_EXT_1RS).

C 5.4 Interfaces

The **Interfaces** menu item enables the setup and integration of new TLS expansion devices over the LAN, as well as an overview of existing interfaces.

GlobalControl IP as main system hardware is already existing and is displayed (see Sketch 13).

Sketch 13



TLS expansion devices searched for and identified using **Network search** are integrated into the system in **Interfaces**.

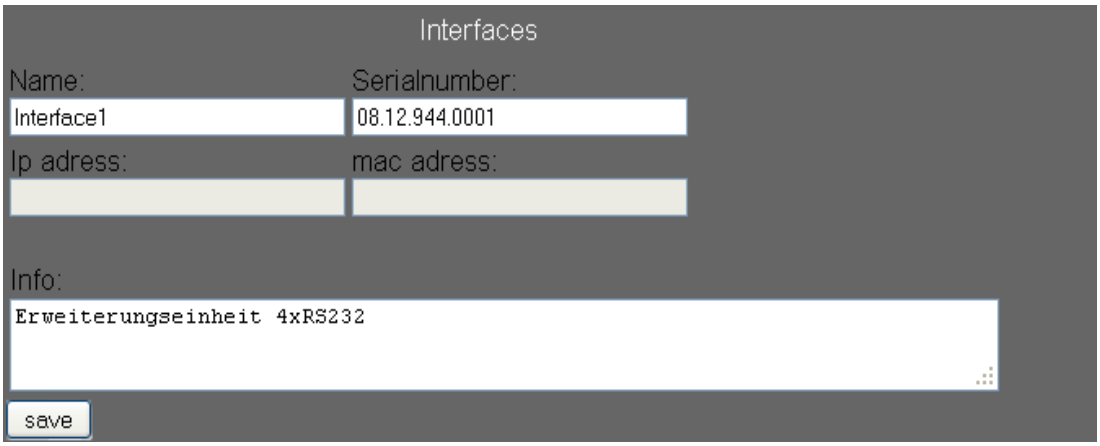
A new expansion device created using the *new* button. This opens a new input mask, into which a name, serial number and any information can be entered (see Figure 14).

The name must be at least 3 characters in length.

Entries must then be confirmed using the *save* button. The interface is thus assigned to the GlobalControl IP. The IP and MAC address fields remain until the first communication takes place with the device. The addresses are then entered automatically.

Special characters cannot be used when inputting a name. Only underscores are allowed (see C 8.5 Character set).

Sketch 14

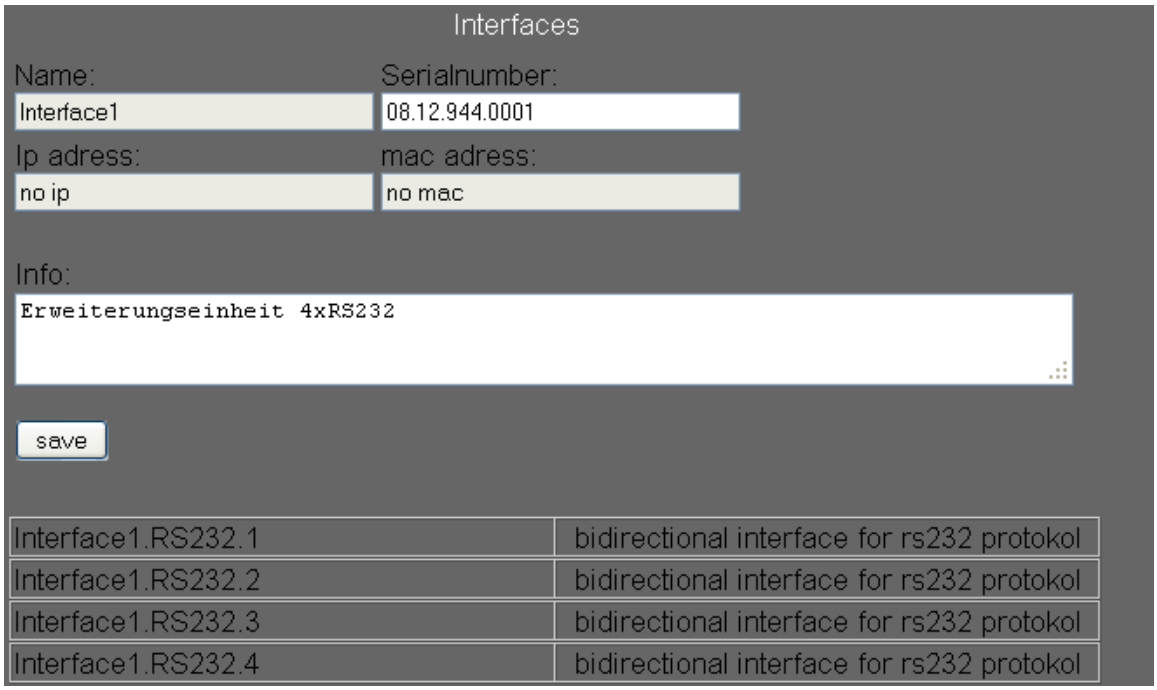


Pressing the *settings* button allows detailed information as well as the existing device interfaces to be queried. All GlobalControl IP hardware connections (inputs and outputs) can also be seen.
Figure 15 shows the expansion device with 4 serial interfaces.

Subsequent name changes are not possible. The serial number can however be changed, when replacing devices.

If no interfaces are shown here, the list of interfaces is no longer current. It is possible to update this using the **System** menu item.

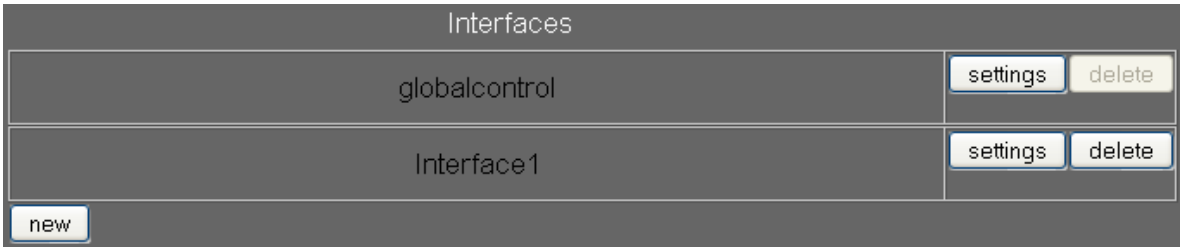
Sketch 15



The expansion devices can be deleted of the interfaces list by pressing the button *delete* (see Sketch 16).

The device globalcontrol itself can not be deleted!

Sketch 16

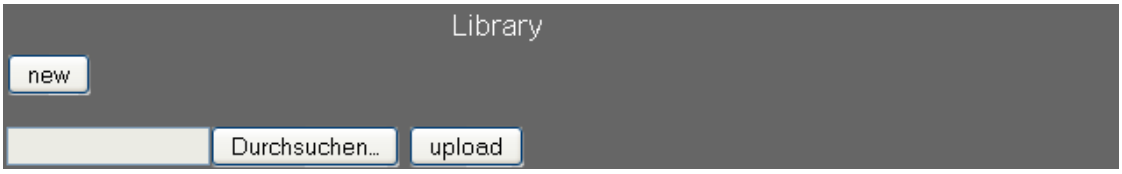


C 5.5 Library

The **Library** menu item allows you to set up libraries. In the single libraries parameter and commands can be created to control end devices (such as RS232, IR, OUT, LAN, GSM), in order to be able to embed these in the respective events. An event is a series of commands which is freely configurable by an Administrator or Technician (s. C 5.8).

Libraries can be newly created or extracted from an existing file. To create a new library, press the *new* button (see Figure 17).

Sketch 17

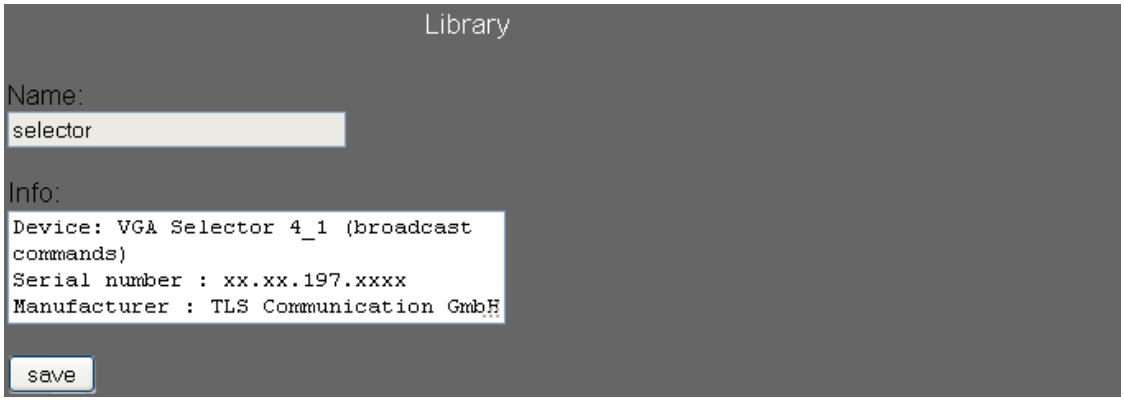


The name of the library can now be entered, together with any other information. This must then be confirmed by pressing the *save* button (see Figure 18).

Subsequent name changes are not possible!

Special characters such as äöü!“§$& etc. are not allowed!
(see C 8.5 Character set).

Sketch 18



The library can now be opened using the *settings* button (see Figure 19).

Sketch 19

After pressing the *settings* button, the library overview appears again, now with the additional *new command* button (see Figure 20).

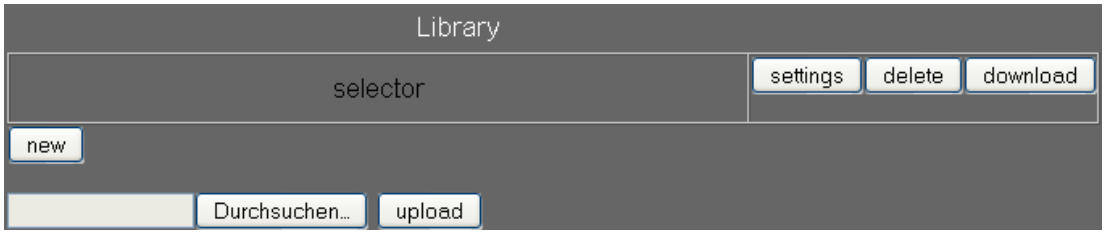
Sketch 20

Under *new command*, you can now set up the actual command and parameters, as well as any other information (see Figure 21). The *save* button then saves the command (for further information, see the appendix Parameters and Data).

Sketch 21

Pressing the *delete* button will delete the entire library (see Figure 22). The *download* button allows the library to be saved to a storage medium or opened using the *GCIP_ServiceSoftware* programme for further processing (further information on the programme can be found in the appropriate appendix).

Sketch 22



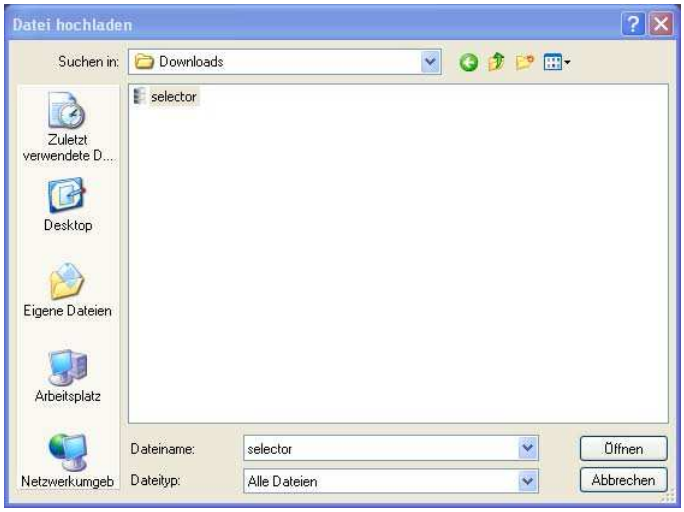
After pressing the *download* button, a window opens allowing you to either Save or Open files (see Figure 23).

The files are in *.tlf format. Depending on the settings on your browser, the file will be directly saved into the Download folder, or you will be asked to specify a save location. Pressing the *OK* button confirms the save.

Sketch 23

The *Browse…* and *upload* buttons allow you to re-upload saved libraries. Press the *Browse…* button, select the file to be uploaded, and press *Open* (see Figure 24). Pressing the *upload* button loads the library into GlobalControl.

Sketch 24



C 5.6 Flags

Flags allow status messages and notifications to be displayed.

Flags can be evaluated, set or edited in **Events**. Their values can be displayed on the control pages.

Flags are created by pressing the button *new* (see Sketch 25).

Sketch 25

Now, a name for the flag, a pre-defined value (initial value) and information can be input (see Sketch 26). A flag can be assigned an initial value upon reboot.

Save by pressing the *save* button. Note that conclusions can be drawn from the name as to the intended use (see Naming Convention in the appendix).

The name may only contain specific characters (see the appendix Character set).

Sketch 26

Flags can be pre-defined using *value*, e.g. with ON, OFF or an arbitrary number as well as any text.
If a flag is to represent figures in a specific format, this figure must be specified in Value.

Example:

The figure should always be four digits: Value: 0000 => each figure is always shown with 4 digits (0005, 0066, 1234).

C 5.7 Timer

Timers are required in order to control temporal sequences. Timers can be launched or reset in Events. Events can also be deleted using a Timer.

Timer are created by pressing the button *new* (see Sketch 27).

Sketch 27

A name for the timer as well as information can now be entered (see Sketch 32).

Note that conclusions can be drawn from the name as to the intended use (see Naming Convention in the appendix). The name may only contain specific characters (see the appendix Character set).

There are two different kinds of timer.

A. Periodic Timer

The Periodic Timer once started runs for the set time interval and can then trigger an event.

To do this, a figure up to 32767 can be entered in the *interval in sec* field (32767 seconds = maximum time entry 9 hours, 6 minutes, 7 seconds).

For example: Extension of a screen, periodic measurements (querying an analogue measurement from a temperature sensor at 2-minute intervals.)

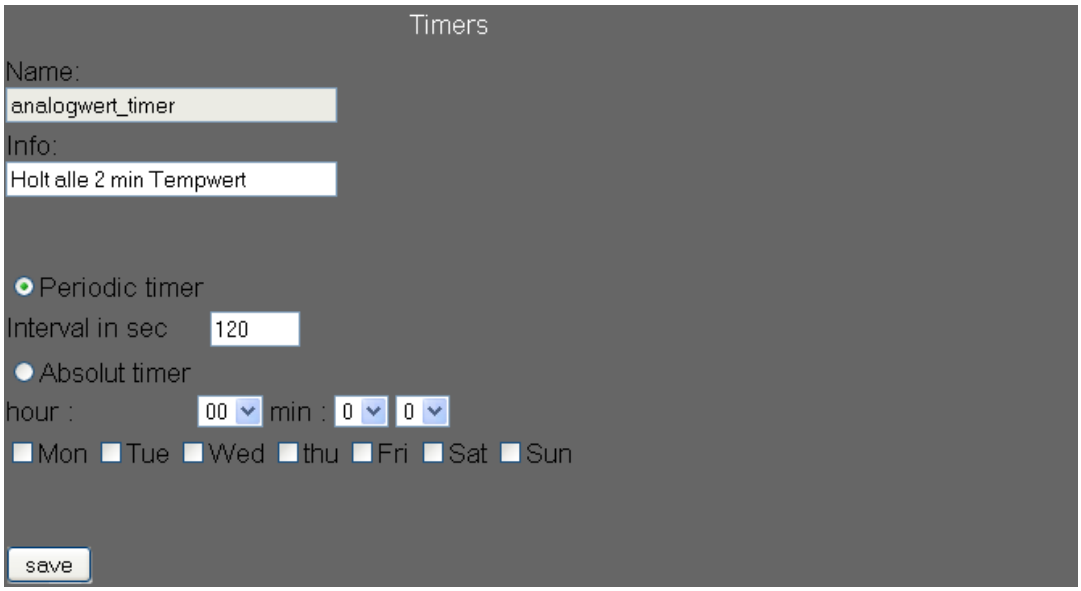
B. Absolute Timer

The Absolute Timer can trigger an event at a pre-defined point in time. To do this, the time and the appropriate day of the week must be entered.

For example: Device shutdown when idle, roller shutter control (Raise the roller shutters at 7:00 am on Wednesdays, Fridays and Sundays).

The storage of the Timer is done by pressing the button *save*.

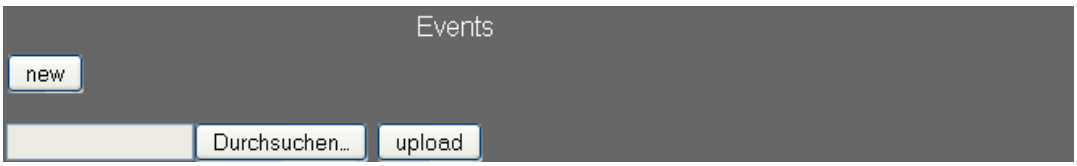
Sketch 28



C 5.8 Events

The Events menu items allows sequences, events as well as sequences of commands to be created, edited, enabled, disabled, loaded, saved or deleted. The control system is configured using these sequences. By pressing the button *new* new sequences of commands can be created (see Sketch 29).

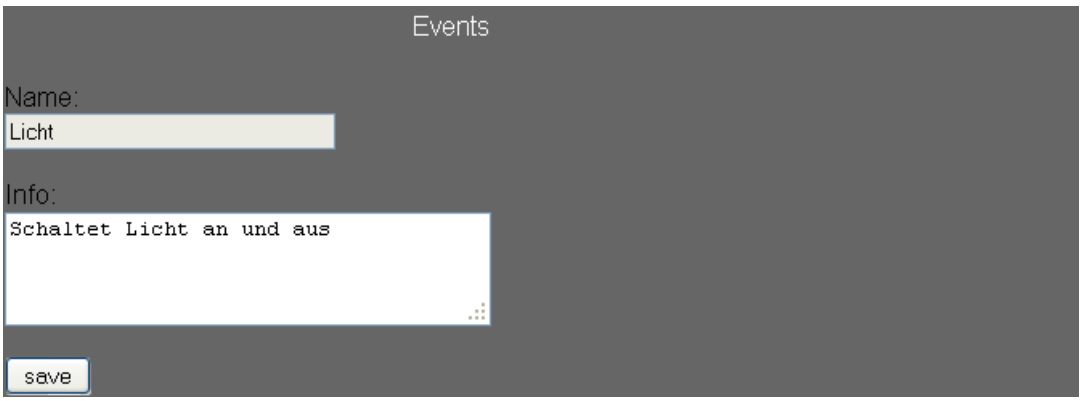
Sketch 29



A name and information can now be entered for this group (see Sketch 30).

Note that conclusions can be drawn from the name as to the intended use (see Naming Convention in the appendix). The name may only contain specific characters (see the appendix Character set).
The storage of the command group is done by pressing the button *save*.

Sketch 30



The command group has now been created and can be edited (settings), deleted (delete), saved (download), and its sequence can be modified (see Sketch 31).

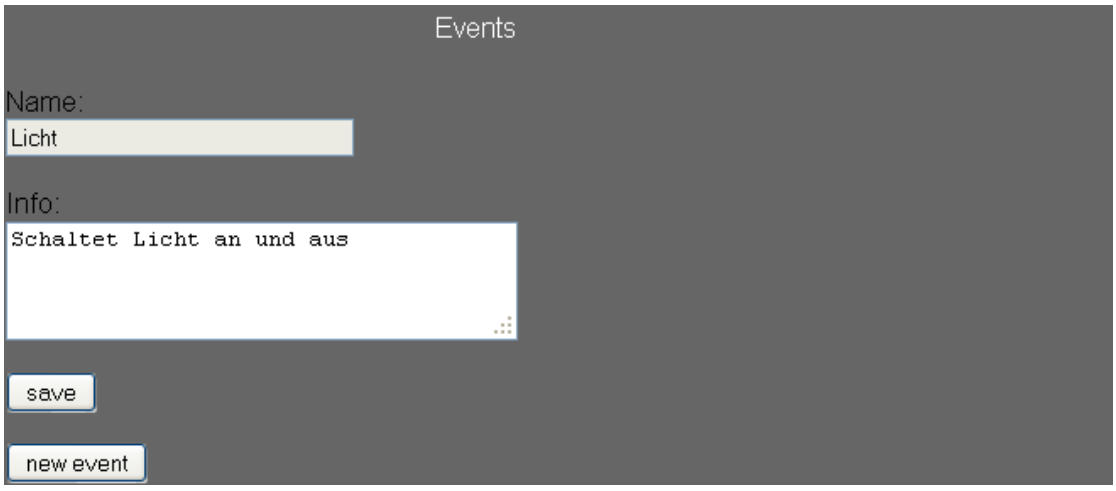
All events are processed from top downwards. The same is valid for the event groups. Thus by pressing the button **up** and **down** the sequence of processing can be changed.

The respective event group can be enabled or disabled using the field on the right-hand edge of the event group.

Sketch 31

By pressing the button *settings* the window for the selected event group opens again (see Sketch 32).

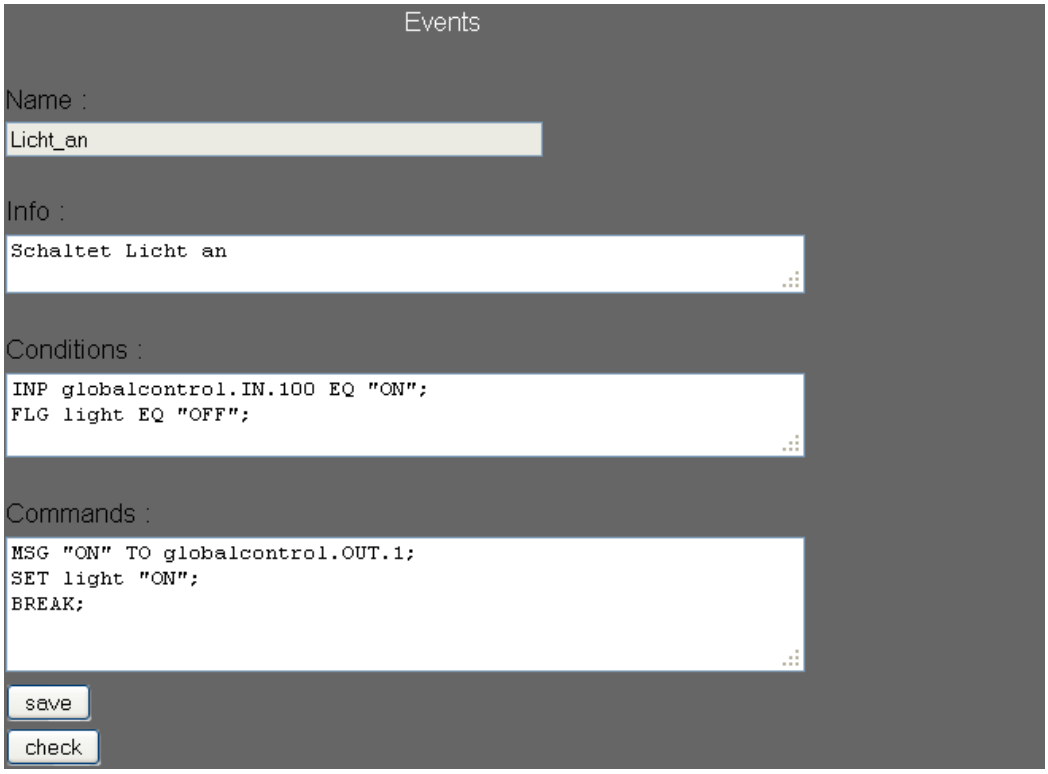
Sketch 32



Pressing *new event* in the event group opens the Events window, into which the actual commands are then entered (see Figure 33).

Enter the names and any required further information in the lines provided. The starting conditions (Conditions) and commands (Commands) must also be provided.

Sketch 33



Conditions

In the section **Conditions** the conditions get listed, which must be fulfilled, in order to execute the subsequent commands.

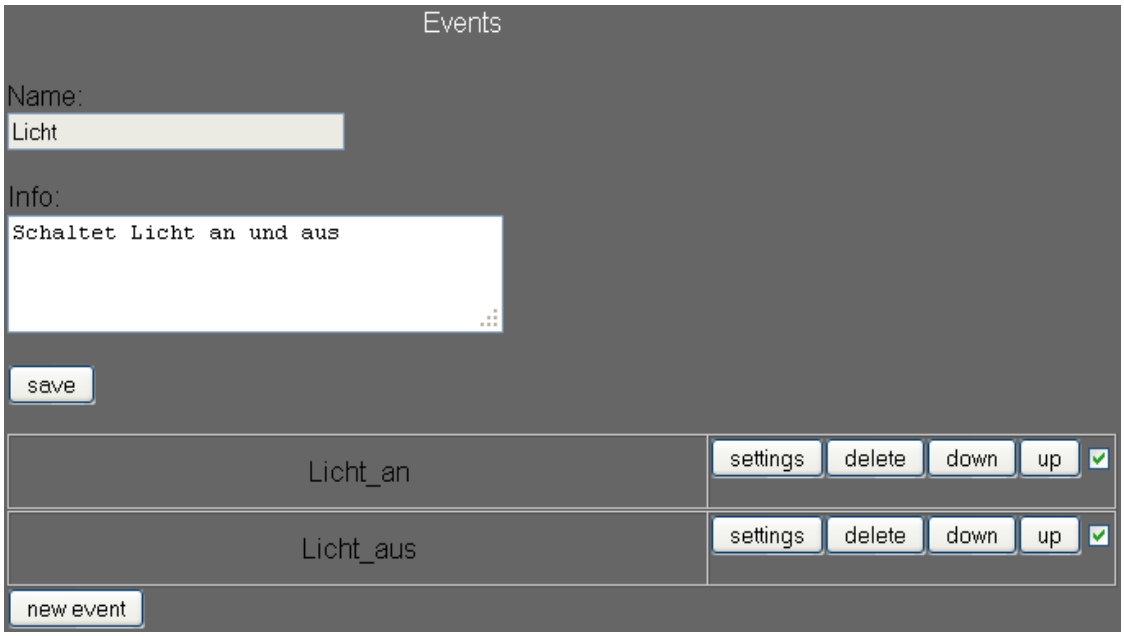
Input impulses or a timer can be used for this. These can be linked to any number of flags. Each condition must end with a semicolon!

Commands

Commands are orders which are performed when the appropriate conditions are met.

Commands can be outputs which set flags as well as start a timer. Each command must end with a semicolon!
For possible **Conditions** and **Commands**, please refer to the appendix Syntax and/or examples.

Sketch 34

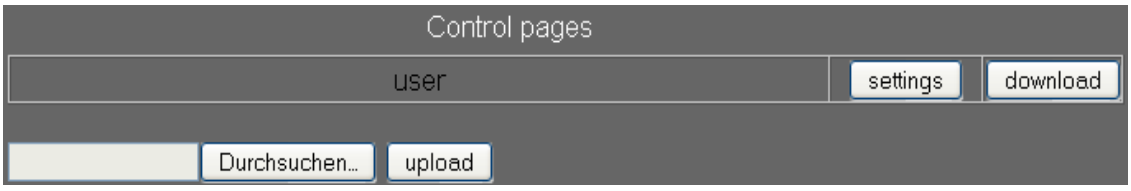


C 5.9 Control pages

By means of **Control Pages** separate control and information pages can be created for users. After creating them in the **User** menu item, **user (authorisation user)** can selected here with *settings* (see Sketch 35).

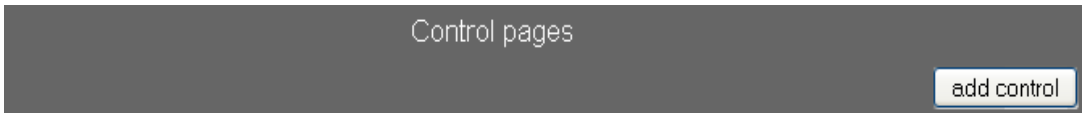
The control pages are laid out differently if you are logged in as a ‘user’-type user. A simple display is available for configuring the pages.

Sketch 35



Buttons for performing events or display fields for displaying information can now be created using the *add control* button (see Figure 36).

Sketch 36



The following entries are now possible:

Name

Enter a name, which will also subsequently be displayed on the control pages.

Icon

Choose a motif which is suitable for your application. Instead of the icons, only the names are given here. Only once you are logged in as a User will the names be replaced with the appropriate icons. You can select from different icons:

Sketch 37

Info

Info can contain any text used for information purposes.

Kind of control

You can choose from **Flag** and **Button**.

Selecting Flag creates a field for displaying information.

Selecting Button creates an executable button.

Linked with

This entry couples a **display** or **button** with a flag or input.

A button can only be linked with an input.

A flag can only be linked with a flag.

Value

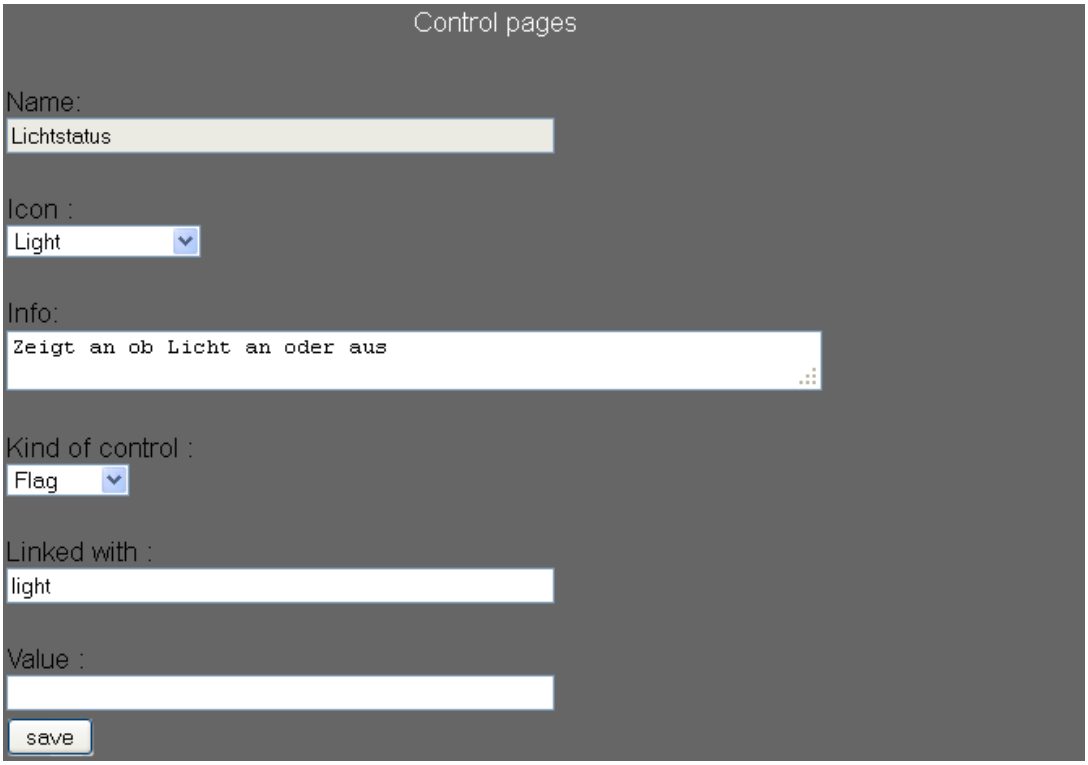
If this is a display field which is linked with a flag, the current value of the flag is automatically shown here.

When the flag is first input, the field value is still empty.

The value only appears after a refresh. If this is a button field, the value which will be assigned when the button is pressed is shown.

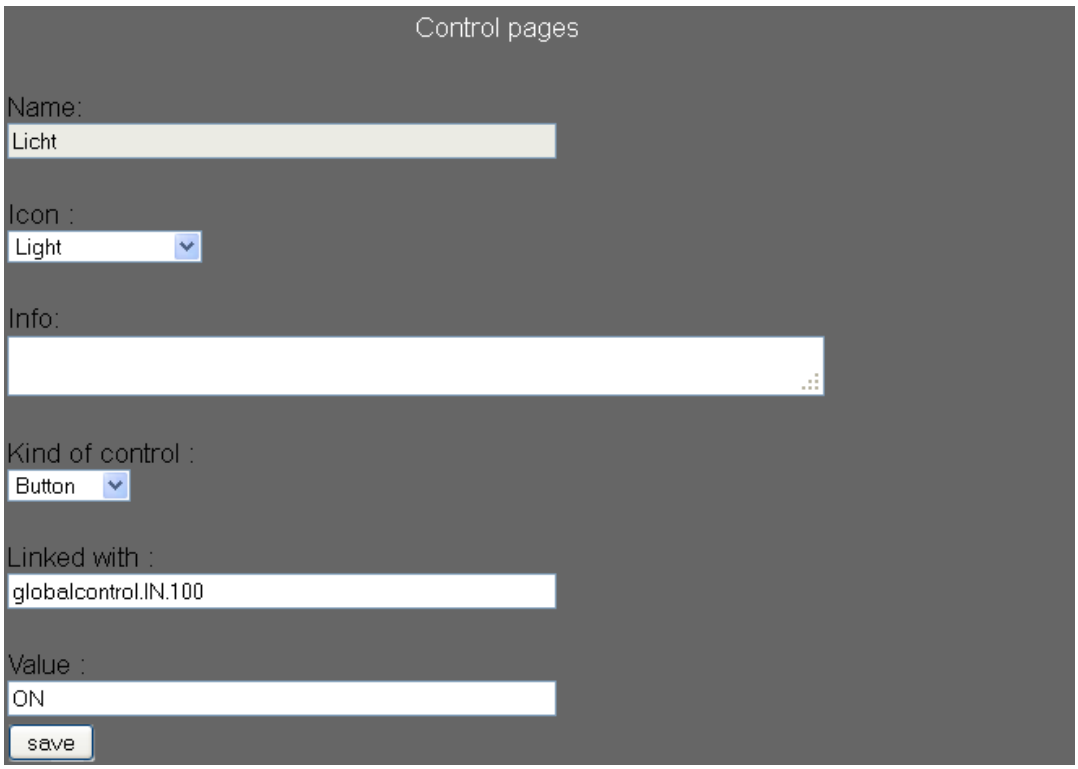
The image below (Sketch 38) shows an example of a flag.

Sketch 38



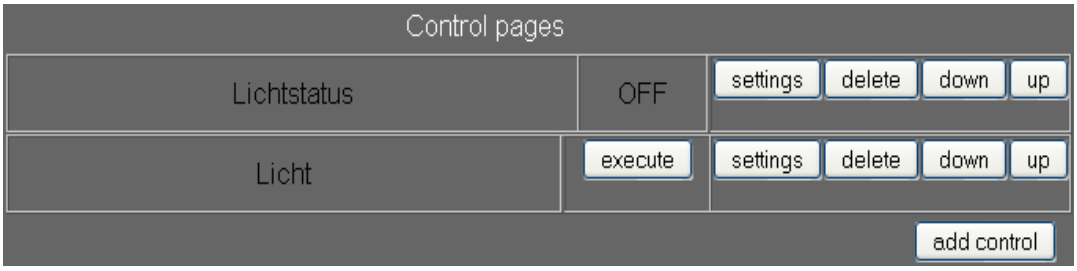
The image below (Sketch 39) shows an example of a button.

Sketch 39



The following interface appears in the overview when the two examples given above are entered (Sketch 40):

Sketch 40



The individual fields can be moved using *up* and *down*. This allows you to change the sequence of the displays to your tastes.

The view as a ‘user’-type user is shown in two columns, from top to bottom (Sketch 41).

Sketch 41

C 5.10 System

By means of **System** some basic settings can be done.

System Settings

The time can be set here. GlobalControl has an RTC (real time clock) and a battery, so that the current time is still displayed even in the event of a power failure.

As the RTC is subject to a specific tolerance, the time may need to be adjusted from time to time. If you have an internet connection, the time can also be adjusted automatically.

The following settings are available:

Time zone:

Specify the time zone, the time difference, and time changes for summer time as well as winter time.

The format is as follows, for example: CET-1BST,M3.4.0/1,M10.5.0/1

A precise description of this format can be found in the appendix.

Configuration:

Here, you are provided with two options: *manual* or *time server update.*

In *manual* mode, the time is not automatically updated

In *time server update* mode, the time is automatically updated from the website indicated in the *time server* field. The time is calculated using the time zone given in the *time zone* field.

Time server:

This is a time server which returns a current time stamp. Another time server can also be input in the next field, in order to avoid setting an incorrect system time due to a faulty setting from a time server. An update is performed automatically upon reboot.

Time:

This gives the current time in hours, minutes and seconds

Date:

This gives the date – year, month and day.

The time and date can be changed if the configuration is set to *manual*.

Intervall

If an internet connection is present, the time can also be regularly updated. To do this, the time interval between updates must be entered in *Interval*.

After making changes to the time settings, you will need to press the *save settings* button.

Configuration Settings

By using the button *save configuration* the current configuration can be saved. On the right of the button optionally a name for the storaged data can be entered.

If no other name is specified, automatically a name will be assigned. This name consist of: saved_Date_Time.tar.

All saved configurations are listed under *saved configurations*. Here, you can save these to a storage medium (*download*), delete them (*delete*) or select them as the active configuration (*set as active*).

The current configuration is overwritten when another configuration is activated.

If you have saved a configuration on a storage medium, you can upload this using *Browse…* and *upload*. The current running configuration is shown in: *active configuration*

Firmware Settings

The firmware currently running on the device is given (actual firmware version: 1.20).

The operating software can be updated to its latest version using *update firmware*. After pressing the *update firmware* button, a new message appears, *Select the firmware file from your local disc and push the start update button*. Browse to select the file and load this onto the device using *start update*.

The file is in Firmware_GCIP_10.tuf format.

Email settings

In order to be able to send e-mails, you must have an active user account with an e-mail service provider. The account settings must be entered into the fields provided for this purpose.

After making any changes, you will need to press the *save settings* button. Normally, providers provide one server for receiving mails, and another for sending.

Occasionally, however, a single server can fulfil both functions. The POP server (**P**ost **O**ffice **P**rotocol) is responsible for receiving mail. Outgoing mail goes through the SMTP server (**S**imple **M**ail **T**ransfer **P**rotocol).

For configuration information and instructions, please refer to your service provider.

Example:

Outgoing mail server (SMTP)	smtp.web.de
Incoming mail server (POP3)	pop3.web.de
Username	MaxMustermann
Password	**********
Mail address:	MaxMustermann@web.de

GlobalControl IP is able to send e-mail. It is not possible to receive e-mail.

IP settings

An IP address is an address on computer networks. These are assigned to all devices on a network so that these are addressable and thus easily accessible.

These addresses can be assigned by **GlobalControl IP** on a fixed basis (static IP) or dynamically (DHCP). Choosing Static IP or Fixed IP can be done here.

No further settings are required if the IP address is dynamically assigned by a router. The following settings will however be required if **GlobalControl IP** must be assigned a fixed IP address:

IP address:

The assigned IP address is input here. e.g.: 192.168.1.165

Gateway address:

This allows networks which are based on completely different protocols to communicate with each other. Usually, the router address is entered here. e.g.: 192.168.1.1

Subnet mask:

The network mask is a bitmask which specifies the number of bits which represent the network prefix at the beginning of the IP address shown.

Together with the IP address for a device, the network mask defines the IP addresses which the device can search for within its own network, as well as those which it can access via a router in other networks.

Possible network masks include:

Network mask:	Number of possible IP addresses:
255.0.0.0	1677724
255.255.0.0	65534
255.255.255.0	254
255.255.255.255	no

First DNS server (Domain Name System):

The main duty of the DNS server is to respond to name resolution requests. It can resolve host names as well as domain names to addresses.
e.g.: Router IP address: 192.168.1.1

Second DNS Server: Similar to the first DNS server, this should not be accessible.
Z.B. 192.168.1.50

Interface list

The interface list contains information on the appropriate in- and outputs of the expansion devices (interfaces).

The list of all TLS interfaces can be updated using *Browse…* and *upload*. After pressing the *Browse*… button, select the appropriate file then press the *upload* button. The file has the following format: Interfacelist_V2.tif

The version number currently on the device can be seen under *actual version*.

C 5.11 Errorlog

The **Errorlog** menu item lists error messages. The respective Eintrag entry is marked with a time stamp, indicating the last time and the frequency with which the error is occurred. The entry also contains brief information, an error code and the location.

The structure appears as follows:

Thu Nov 30 04:54:07 2000 : 11 : I can't get the communication parameter for device , error : 71 : globalcontrol

Date : Thu Nov 30 04:54:07 2010

error count: 11

Information : I can't get the communication parameter for device

error code : error : 71

location : globalcontrol

Error codes:

Error Codes of the groups:

Area 00 – 19 :	Help functions
Area 20 – 39 :	System configuration
Area 40 – 45 :	SND command (Disp)
Area 46 – 70 :	GSM
Area 71 – 90 :	Function send
Area 91 – 100 :	System timer
Area 101 – 110 :	GPIO

C 5.12 SD card

The **SD card** menu item allows you to delete or read saved files from the SD card. Pressing the *download* button allows you to open the file directly with an editor programme or save it to your computer.

You can save messages onto the SD card using an event. For further information, refer to the chapter Syntax and examples.

When saving to a file, a time stamp is always inserted followed by the appropriate message. Further messages in the same file are written underneath each other.

Pressing *delete* deletes the relevant file.

C 6 Initial operation / Configuration

Initial operation / configuration contains general information on declarations.

A snapshot of conditions/commands

Conditions

INP *namei* EQ “*“;
INP *namei* EQ “text“;
INP *namei* EQ libname.comname;
TMR *namet*;
FLG *namef* EQ *namei*;
FLG namef EQ *namei Fs Fe*;
FLG *namef* EQ “text“;
FLG *namef* LT “number“;
FLG *namef* GT “number “;

Commands

MSG “GET“ TO *nameo*;
MSG “text“ **TO** *nameo*;
MSG LIB libname.comando **TO** *nameo*;
MSG FLG *namef* **TO** *nameo*;
MSG INP *namei* **TO** *nameo*;
MSG INIT libname.comando **TO** *nameo*;
MSG [**LIB** libname.comando **FLG** *namef* **INP** *namei* “text“] **TO** *nameo*;
START *namet*;
SET *namef* “text“;
SET *namef namei*;
SET *namef namei Fs Fe*;
FLG *namef* INCR value format;
FLG *namef* DECR *value format*;
SLEEP “time“ *unit*;
BREAK;

C 6.1 Namensgebung

C 6.1.1 *namei*

namei is the name of an input.

namei is composed of *Device name*.INPUT.Number.

Device name: Globalcontrol name or name of the interface

Input: Input name in capitals

Number: Optional input number when more than one is present

You can see which device name, input and which number is possible from the **Interfaces / settings** menu item.

Inputs which are not given in the **Interfaces / settings** menu item are also possible. These are hereinafter referred to as virtual inputs.

Examples for *namei*:

- globalcontrol.IN.1
- globalcontrol.ANALOG.2
- interface_1.SIN.1
- interface_2.RS232.4
- interface_3.KNX.120
- globalcontrol.GSM
- globalcontrol.TCPIP
- globalcontrol.PJLINK
- globalcontrol.UDP

C 6.1.2 *namet*

namet is the timer name, in other words the name of a time piece, which must already be defined under the **Timer** menu item.

Timer names cannot include special characters or spaces characters (see C 8.5 Character set)!

Examples for *namet*:

- analogtimer
- timer_1
- Blindrunningtime_down

C 6.1.3 *namef*

namef is a flag name, i.e. the name of a flag which must already be defined under the Flags menu item.

Flag names cannot include special characters or space characters (see C 8.5 Character set)!

Examples for *namef*:

- analogvalue
- SMS_textmessage
- text1

C 6.1.4 *nameo*

nameo is the name of an output.

nameo is combined of *Devicename*.OUTPUT.Number.

Device name: Name globalcontrol or name of the Interface
OUTPUT: Name of output in capital letters.
Nummer: Optional number of output if multiple outputs do exist.

Please read the menü item **Interfaces / settings** to know which device name, output and number is possible.

Examples for *nameo*:

- globalcontrol.OUT.1
- interface_1.SOUT.3
- interface_2.RS232.4
- interface_3.KNX.120
- interface_4.IR.1
- globalcontrol.GSM
- globalcontrol.SDCARD
- globalcontrol.EMAIL
- globalcontrol.TCPIP
- globalcontrol.PJLINK
- globalcontrol.UDP

C 6.2 Conditions

Conditions are criteria which trigger an event. The commands INP or TMR must always be inserted in the first line of the Conditions.

The command can also be linked with different Flags using AND. Each further condition which must be fulfilled must be separated with a semicolon.

No Or function is possible here. To perform Or functions, a new event must be set up, with another Condition and the same Commands.

One input cannot be linked with another using AND. No AND link is possible between an input and a timer, and neither is this possible between two timers.

The Examples provide a number of specific solutions.

Note that the command operators (such as **INP**, **TMR**, **FLG**) must always be written in capitals.

C 6.2.1 Input condition INP

The **INP** command allows the querying of any input conditions.

Possible combinations for the INP command:

INP *namei* EQ “*“;
INP *namei* EQ “text“;
INP *namei* EQ “text*“;
INP *namei* EQ “*text“;
INP *namei* EQ libname.comname;

namei is an interface input which must already be defined under the Interface menu item.

Please read the menü item **Interfaces / settings**, to know which input is possible.

An incorrect entry will lead to an error message.

After the EQ (equal) a simple text in quotation marks or a command from the library can be input. If a “*” character is used as the text, each message is processed to this input. It is not possible to combine text and “*”.

Commands from the library always comprise 2 parts, separated by a period.

The first part is the name of the device: *libname* (as it is stored in the library under the item *Name*). The second part is the relevant command: *comname*.

One particularity:

When the GlobalControl IP or an interface is started for the first time, the device will automatically issue the message:

INP globalcontrol.BOOT EQ “ON“

Configuration or Start commands can then be executed.

Examples:

The message at input RS232.1 of the globalcontrol must match the command channel1 in the library *VGASelector*.

INP globalcontrol.RS232.1 EQ VGASelector.channel1;

The message received by SMS from any telephone must contain the message *Heating On*.

INP globalcontrol.GSM EQ “Heating On“;

The message at input RS232.1 of interface1 must contain the message *Z01%4FZ%0D%0A*.
(For this purpose, HEX data must be labelled with a preceding %, otherwise only ASCII characters are allowed)

INP interface1.RS232.1 EQ “Z01%4FZ%0D%0A“;

The message from input ANALOG 1 can arbitrarily be

INP globalcontrol.ANALOG.1 EQ “*“;

C 6.2.2 Timer TMR

If a timer is running (which has been set in the Commands), this can be queried using TMR.

Possible combinations for the TMR command:

TMR *namet*;

namet is a timer name, and must already be defined under the Timer menu item. The TMR command must end with a semicolon.

C 6.2.3 Flags FLG

The command **FLG** queries a flag whether a defined condition is met.

Possible combinations of the command FLG:

FLG *namef* EQ *namei*;
FLG *namef* EQ *namei Fs Fe*;
FLG *namef* EQ “txt“;
FLG *namef* LT “txt“;
FLG *namef* GT “txt“;

namef is a flag name, which must already be defined under the Flags menu item.
A flag can be compared with a message from an input *namei*, with a numerical value or with any text.

A comparison with an input message is required in order to intercept 2 identical consecutive commands.

A comparison can also be performed only on a defined area of the input message. For this purpose, 2 characters, ***Fs*** and ***Fe,*** must be input for the appropriate filter area.

Fs is the first character of the message, and *Fe* the last. If *Fs* = *Fe*, only one character is filtered. If only *Fs* is given, the rest of the message from that character onward is included.

It is also possible to use the comparison **Greater** and **Less** (figures must in this case be used as text).

LS: less than, < ; GT: greater than, >.

Examples:

Example of a filter: Incoming RS232 message:

Z001W+0037Z%0D%0A

FLG *namef* EQ *namei 7 10*; Result: 0037 (characters 7 to 10)

C 6.3 Commands

Commands are executed commands. This enables messages to be sent, flags to be set and timers to be started. Each command must end with a semicolon.

C 6.3.1 Message MSG

The command **MSG** issues a message to any output (*nameo*).

The command includes which message, including its message type, should be sent where.

Possible combinations of MSG commands

MSG “text“ **TO** *nameo*;
MSG “GET“ **TO** *nameo*;
MSG INP *namei* **TO** *nameo*;
MSG FLG *namef* **TO** *nameo*;
MSG LIB libname.comando **TO** *nameo*;
MSG INIT libname.comando **TO** *nameo*;
MSG [**LIB** libname.comando **FLG** *namef* **INP** *namei* “text“] **TO** *nameo*;

An incorrect entry will lead to an error message. *nameo* can be further expanded with a file name or an e-mail address. This expansion must then be placed in square brackets.

Any text can be sent to an output using the MSG **“txt”** command. The text to be sent must be set in quotation marks.

The MSG **“GET”** command is responsible for the retrieval of values from the analogue inputs. These must then be retrieved using a new event. **“GET”** must be set in quotation marks.

The command MSG **INP** is used to forward messages. The incoming message from the appropriate INP is forwarded to an output.

The command MSG **FLG** sends the value of a flag to an output.

The command MSG **LIB** sends a saved command from the library to an output.

The command MSG **INIT** is for interface messages. These *only* transfer parameters which are contained in the library (all data is ignored). (Example C8.3.4)

Note that in the MSG commands, the commands **“GET“ INP**, **FLG**, **LIB**, **INIT** are capitalised.

Individual elements can also be linked and only then sent as a message. This linkage must be made using square brackets.

Square brackets [and] can be used to combine and/or merge several of the commands above. Spaces must be placed before and after each of the brackets! The individual MSG commands are then simply listed consecutively. This linkage is limited to a maximum of 8 elements.

A space after an opening bracket and before the closing bracket is *vitally important.* Each message must end with a semicolon.

Examples:

- Switch on output 1 at GlobalControl IP:

  MSG “ON“ TO globalcontrol.OUT.1;

- Switch off output 1 at GlobalControl IP:

  MSG “OFF“ TO globalcontrol.OUT.1;

- Switch on signal output 1 at GlobalControl IP:

  MSG “ON“ TO globalcontrol.SOUT.2;

- Send a text to an email address:

MSG “Hello this is my first email“
TO globalcontrol.EMAIL.[info@tls-gmbh.com];

(The e-mail address must be set in square brackets)

- Retrieve analogue values from input Analog1:

  MSG ”GET“ TO globalcontrol.ANALOG.1;

- Send RS232 message from the library to an output:

  MSG LIB TV.start TO globalcontrol.RS232.2;

- Send RS232 message to an output:

  MSG START%0D%0A TO globalcontrol.RS232.2;

  (HEX characters must be listed with preceding % characters)

- Save a message from a flag to an SD card:

  MSG FLG counter TO globalcontrol.SDCARD.[counter.txt];
  (Place file name in square brackets)

- Send message from a flag to an email address:

  MSG FLG flag1 TO globalcontrol.MAIL.
  [max-mustermann@xyz.de];

- Send message from a flag to a telephone number:

  MSG FLG flag2 TO globalcontrol.GSM.[+492103500640];

- Send message from a flag to an IP address:

  MSG FLG flag3 TO globalcontrol.TCPIP.[192.168.1.214:30];

- Save a message from a input to an SD card:

  MSG INP globalcontrol.GSM TO
  globalcontrol.SDCARD.[email.txt];

- Send merged message to RS232 interface:

  MSG [LIB LCD.volume_up FLG Volume "Z%0D%0A"] TO
  globalcontrol.RS232.1;

  (Command from library + text characters, HEX characters must be listed with preceding % characters)

- Send message over network to IP address:Port

  MSG LIB pjlink.off TO
  globalcontrol.PJLINK.[192.168.1.168:4352];

C 6.3.2 Start of a timer START

The command **START** makes a timer start to run.

Possible combinations of the command START:

START ***namet***;

namet is a timer name, which must already be defined under the Timer menu item. Each start command must end with a semicolon.

Example:

Starting the timer with the name analogtimer.

START analogtimer;

C 6.3.3 Set a flag FLG

The command SET sets a flag with a value. The value can be a normal text or also a message from an input.

Possible combinations of the command SET

SET *namef* “text“;
SET *namef namei*;
SET *namef namei Fs Fe*;

namef is a flag name, which must already be defined under the Flags menu item. A flag can be assigned to any variable. An input message *namei* can also be saved in a flag. To do this, the incoming message for the relevant input is saved in the flag.

A specific area of an incoming message can also be saved in the flag. To do this, the area must be marked with *Fs* and *Fe*. *Fs* is the first character and *Fe* the last character to be taken into consideration.

If *Fs* = *Fe*, only one character is filtered. If only *Fs* is given, the rest of the message from that character onward is included. Each command must end with a semicolon.

Examples:

The relevant text is saved in flag Message.

SET message “this is my first message“;

The value which arrives in globalcontrol from analogue input 1 is saved in flag analoguevalue

SET analoguevalue globalcontrol.ANALOG.1;

If a message arrives from the serial interface (e.g.: Z0_001+0013Z%0D%0A), the 10th and 11th characters are saved in the Flag *volume*. In this case, this is 13.

SET volume globalcontrol.RS232.2 10 11;

C 6.3.4 Counting up and down for a flag FLG

This command allows counting up and down for a variable or flag.

Possible combinations of the command FLG:

FLG *namef* INCR *value format*;
FLG *namef* DECR *value format*;

namef is a flag name which must already be defined under the *Flags* menu item. For each call, the flag is increased or reduced by a value (From the Latin *incrementare*: increase; *decrementare*: reduce).

value gives the upper maximum and lower minimum values to which the count proceeds. The minimum is zero, and the maximum is 10000. If no *value* is given, the count proceeds to the maximum and minimum values.

Negative counts are *not* possible. *Format* defines the number of digits that the number should have. A maximum of 5 digits is possible. *Format* can be any character.

If *format* is not specified, the upward and downward count proceeds as normal. Each command must end with a semicolon.

The format of [value] can – if required – be padded as appropriate with zeros as placeholders.

Examples:

If Volume is 0005, for example, it will increment to 0006.

FLG Volume INCR 47;

If MainVolume is for example 9, it will increment to 10.

FLG MainVolume INCR 50;

AVolume is now counted from 000 to 300.

FLG AVolume INCR 300 xxx;

C 6.3.5 Sleep, wait SLEEP

The **SLEEP** command allows a set time to elapse before the next command is processed.

Possible combinations of the command SLEEP:

SLEEP “time“ *unit*;

time is a figure, which can reach a maximum of 32767. This number must be set in quotation marks. *unit* can be seconds or milliseconds (The following are allowed: sec SEC ms MS).

Each command must end with a semicolon. (32767 seconds = maximum time entry 9 hours, 6 minutes, 7 seconds).

Examples:

Wait 10 milliseconds before performing the next command.

SLEEP “10“ ms;

Wait for 5 seconds before performing the next command.

SLEEP “5“ SEC;

C 6.3.6 Stop further processing BREAK

The command BREAK ensures that no further events in the event group are performed. No further parameters are required. The command must end with a semicolon.

Possible combinations of the command BREAK:

BREAK;

The BREAK command requires no further parameters. In globalcontrol, all events are performed consecutively. In an event in which a device is activated by the press of a button, and then switched off again in the next event using the same button, the subsequent performances in the first event must be stopped using the BREAK command (see Examples in the appendix).

C 6.3.7 RESET

The RESET command can be used to reset the timer, and the set time is then rebooted.

z.B. RESET timer

The command must end with a semicolon..

C 7 Examples Events

Below are some examples of how events can appear in the **GlobalControl IP**. These are intended to show you possible configurations of the system.

C 7.1 Analogue value acqusition

Conditions:

INP globalcontrol.IN.101 EQ ”ON“;

Commands:

MSG "GET" TO build_in_interface.ANALOG.1;

Conditions:

INP globalcontrol.ANALOG.1 EQ “*”;

Commands:

SET analog1 build_in_interface.ANALOG.1;

Description:

A value query for Analogue input 1 is started by globalcontrol’s virtual input 101.

The response must then be processed in a further event.

In this case, the value of the analogue input is saved in a flag analog1.

C 7.2 Writing to an SD card

Conditions:

INP globalcontrol.IN.102 EQ ”ON“;

Commands:
MSG "this is a message" TO build_in_interface.SDCARD.[text.txt];

Description:

A simple text is saved on the SD card in the file text.txt by globalcontrol’s virtual input 102.

The file name must be set in square brackets.

If the txt suffix is missing from the file name, this is added automatically. If the file name is completely missing, the standard name logfile.txt is shown.

C 7.3 And linking of 2 inputs

Conditions:

INP globalcontrol.IN.103 EQ ”ON“;

Commands:

SET flagIN103 “ON“;

Conditions:

INP globalcontrol.IN.104 EQ ”ON“;

Commands:

SET flagIN104 “ON“;

Conditions:

INP globalcontrol.IN.103 EQ ”OFF“;

Commands:

SET flagIN103 “OFF“;

Conditions:

INP globalcontrol.IN.104 EQ ”OFF“;

Commands:

SET flagIN104 “OFF“;

Conditions:

INP globalcontrol.IN.103 EQ ”ON“;
FLG flagIN104 EQ “ON“;

Commands:

MSG “ON“ TO globalcontrol.OUT.1

Conditions:

INP globalcontrol.IN.104 EQ ”ON“;
FLG flagIN103 EQ “ON“;

Commands:

MSG “ON“ TO globalcontrol.OUT.1

Description:
A flag flagIN103 is set to the value ON or OFF by virtual input 103.

A flag flagIN104 is set to the value ON or OFF by virtual input 104.

In addition, Output 1 is set to ON by the relevant input and querying of the flags of the other inputs. The sequence of the events is crucial at the point, as the events are processed sequentially.

The condition is only met once the input and the flag of the other input are ON.

The flags must first be set before the linking can proceed.

C 7.4 The Break command

Conditions:

INP globalcontrol.IN.1 EQ „ON“;
FLG ProjectorON EQ „OFF“;

Commands:

MSG „ON“ TO globalcontrol.RS232.1;
SET ProjectorON „ON“
BREAK

Conditions:

INP globalcontrol.IN.1 EQ „ON“;
FLG ProjectorON EQ „ON“;

Commands:

MSG „OFF“ TO globalcontrol.RS232.1;
SET ProjectorON „OFF“

Description:

A device (projector) is switched on by the press of a button. The projector is also switched off again using the same button.

If no **BREAK** command is present, the next command will also be processed, as the flag was set to ON in the previous event.

C 7.5 Linking messages

Conditions:

INP globalcontrol.IN.1 EQ "ON";

Commands:

FLG Volume INCR 47;
MSG [LIB LCD.volume_up FLG Volume "Z%0D%0A"] TO globalcontrol.RS232.1;

Description:

This event links a library with a flag and text as an example of volume control on an LCD.

The library contains the entry LCD.volume_up: Z001W+.
The flag is configured for 4 digits and has a value of 0000.

A normal text must be set in quotation marks. The RS232 command is thus as follows:

Z001W+0000Z%0D%0A.

Following a **%** character, the next two characters are processed as HEX characters.

The flag Volume is increased by 1 with every press of the button using the additional **INCR** command, up to the maximum value 47.

If the input is configured for *cyclical sending*, the volume could also be continuously increased by continuously pressing the input button.

C 7.6 Using filters

Conditions:

INP globalcontrol.RS232.1 EQ "*";
FLG IN_Volume EQ globalcontrol.RS232.1 1 6;

Commands:

SET flg_Antwort globalcontrol.RS232.1 10 11;

Description:
If in this example the incoming message is coming from RS232.1 Port Z0_001+0013Z%0D%0A, the message is first compared with flag IN_Volume.
In this case only characters 1 to 6 of the message, i.e.: Z0_001.

If the comparison is positive, characters 10 and 11 are stored in the **Commands** in flag flg_response, i.e. in this case 13.

Following a **%** character, the next two characters are processed as HEX characters.

C 7.7 Buzzer

Conditions:

INP globalcontrol.IN.105 EQ ”ON“;

Commands:

MSG “ON” TO globalcontrol.BEEP;

Description:
The text “ON” is sent to globalcontrol’s output BEEP by virtual input 105.

This triggers a 2-second tone on the buzzer.

C 7.8 KNX in and outputs

Conditions:

INP globalcontrol.KNX.120 EQ “1“;

Commands:

MSG “1” TO globalcontrol.KNX.5;

C 7.9 Count « increment »

Conditions:

INP globalcontrol.IN.106 EQ ”ON“;
FLG counter LT “10”;

Commands:

FLG counter INCR 10 xx;
MSG FLG counter TO globalcontrol.SDCARD.[number.txt];

Description:
The value for the counter is incremented by one by the virtual input 106 and a query whether the counter is lower than 10.

The flag Counter is saved to the SD card.

Output on the SDCARD in the file number.txt:

Mon Mar 14 11:15:35 2011 log 01
Mon Mar 14 11:15:50 2011 log 02
Mon Mar 14 11:17:14 2011 log 03
Mon Mar 14 11:17:16 2011 log 04
Mon Mar 14 11:17:17 2011 log 05
Mon Mar 14 11:17:18 2011 log 06
Mon Mar 14 11:17:19 2011 log 07
Mon Mar 14 11:17:20 2011 log 08
Mon Mar 14 11:17:22 2011 log 09
Mon Mar 14 11:17:23 2011 log 10

C 7.10 Count « decrease »

Conditions:

INP globalcontrol.IN.107 EQ ”ON“;
FLG counter GT “0”;

Commands:

FLG counter DECR 0 xxxx;
MSG [“counter: “ FLG counter] TO
globalcontrol.SDCARD.[number.txt];

Description:
The value for the counter is decreased by one by the virtual input 107 and a query whether the counter is greater than 0.

The flag is saved - additionally with the text counter - to the SD card.

Output on the SDCARD i in the file number.txt:

Mon Mar 14 12:22:59 2011 log counter: 0009
Mon Mar 14 12:23:00 2011 log counter: 0008
Mon Mar 14 12:23:01 2011 log counter: 0007
Mon Mar 14 12:23:01 2011 log counter: 0006
Mon Mar 14 12:23:02 2011 log counter: 0005
Mon Mar 14 12:23:03 2011 log counter: 0004
Mon Mar 14 12:23:03 2011 log counter: 0003
Mon Mar 14 12:23:04 2011 log counter: 0002
Mon Mar 14 12:23:05 2011 log counter: 0001
Mon Mar 14 12:23:05 2011 log counter: 0000

C 7.11 Motor control up / down

Conditions:

INP globalcontrol.IN.2 EQ "ON";
FLG blind EQ "UP";
FLG run EQ "OFF";

Commands:

SET run "ON";
MSG "ON" TO globalcontrol.OUT.1;
SLEEP 5 SEC;
MSG "OFF" TO globalcontrol.OUT.1;
SET blind "DOWN";
SLEEP 500 MS;
SET run "OFF";

Conditions:

INP globalcontrol.IN.3 EQ "ON";
FLG blind EQ "DOWN";
FLG run EQ "OFF";

Commands:

SET run "ON";
MSG "ON" TO globalcontrol.OUT.2;
SLEEP 5 SEC;
MSG "OFF" TO globalcontrol.OUT.2;
SET blind "UP";
SLEEP 500 MS;
SET run "OFF";

Description:

An output is set for a motor with input IN2 and the conditions that for example, a screen is in position UP and the motor is not already running.

The flag Run is first set to ON so that there is no further start or immediate reverse order.

C 7.12 UDP command WOL

Description:

WOL (Wake On LAN) is a standard for starting a switched-off computer via the built-in network.

GlobalControl IP allows the sending of Wake On LAN commands.

For a command of this kind, 6 x FFh + 16 x the relevant MAC address must be sent per UDP per broadcast.

Conditions:

INP globalcontrol.IN.200 EQ "ON";

Commands:

MSG LIB UDP.workshop TO globalcontrol.UDP;

Library

Command: workshop
Parameter: 255.255.255.255:9
Data:
%FF%FF%FF%FF%FF%FF%00%08%54%53%26%18%00%08%54
%53%26%18%00%08%54%53%26%18%00%08%54%53%26%18
%00%08%54%53%26%18%00%08%54%53%26%18%00%08%54
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%53%26%18%00%08%54%53%26%18%00%08%54%53%26%18
%00%08%54%53%26%18%00%08%54%53%26%18

6 x FF (HEX) + 16 x MAC address

C 8 Explanations

C 8.1 Syntax

(see C 6 Initial operation / Configuration)

C 8.2 Serviceport

The Serviceport is used for communication with **GlobalControl IP**. Here you can observe detailled the operating sequences.

The Serviceport is used predominantly for error diagnostics within the configuration. You can connect the input Serviceport with a special cable to a serial Comport of your computer. The Serviceport is a 4pin 3,5mm jack socket connection. A cable for connecting the Serviceport is included in delivery.

If your PC does not have a serial RS232-interface, you also have the possibility to communicate over an USB Port – via a special USB/RS232 converter – with **GlobalControl IP**.

After having made the connection, a Terminal Programm for the serial interface must be opened.

Windows has for this e. g. the Hyper Terminal, which you can find under *Start – Programs – Accessories – Communication*.

115200 8 N 1 should be selected as connection settings (115200 Baud, 8 Databit, None Parity, 1 Stopbit). A more comfortable programme is for example *HTerm*, which is available for free on the internet.

As you are directly accessing the operating system, incorrect entries can cause serious damage to the system! Make sure that you enter the exact wording of the command listed here!

The command **root** must be given beforehand in order to log into the system.

root [enter]

Make sure that the line ending **CR LF** is set.

(CR: Carriage Return; LF: Line Feed)

GlobalControl responds with a status:

BusyBox v1.13.2 (2010-04-21 09:15:26 CEST) built-in shell (ash)
Enter 'help' for a list of built-in commands.

Various output modes can be set. The following inputs are required for this purpose:

echo x > /usr/system/dbgconfig [Enter]

The following inputs can be made for **x**: (x itself is not possible!)

- x = i for all warnings, information and error messages
- x = w for warnings and error messages
- x = n for error messages only

echo n > /usr/system/dbgconfig [Enter]
(e.g. sends only error messages)

The setting for all warnings, information and error messages is shown below.

GlobalControl IP issues a time stamp every minute:

scan absolut timer ...
current time : Tue Mar 22 09:00:00 2011

Example 1:

Subsequently, **GlobalControl IP**'s input 1 is set to ON and then output 1 is also set to ON by means of an event.

The corresponding event is:

Conditions:

INP globalcontrol.IN.1 EQ "ON";

Commands:

MSG "ON" TO globalcontrol.OUT.1;

input message : input~11.01.239.0014~IN.1~2~ON
(Incoming message from IN1)

Arg : input~11.01.239.0014~IN.1~2~ON
(Serial-No.~Input~Character)

Starting nea task, arg : input~11.01.239.0014~IN.1~2~ON , pid : 1199
get interface name searching for : 11.01.239.0014
(Searching IP adress)

name found globalcontrol
(Associated name with IP)

Input settet , name : globalcontrol.IN.1 , value : ON
No parameter
input ready
Event group found Testeventgruppe
(Event group found)

Condition : INP globalcontrol.IN.1 EQ "ON";
(Conditions in the Event)

get input, name : globalcontrol.IN.1
no input parameter
(no further parameters)

returned input data : ON
(Data = ON)

compare between A : ON and B : ON
(Comparison of input and event)

compare positive
(Comparison is positive)

Condition true
(Conditions are fulfilled)

Commands : MSG "ON" TO globalcontrol.OUT.1;
(Executing conditions)

destination : globalcontrol
(End device)

No parameter
(no further parameters)

data : ON
(Output is set on ON)

Build in modul !!!
(Module in globalcontrol)

Example 2:

Subsequently, GlobalControl's input 2 is set to OFF and a command is then sent from the library to the output RS232.1 by means of an event.

The corresponding event is:

Conditions:

INP globalcontrol.IN.2 EQ "OFF";

Commands:

MSG LIB Test1.test TO globalcontrol.RS232.1;

input message : input~11.01.239.0014~IN.2~3~OFF
(Incoming message from IN1)

Arg : input~11.01.239.0014~IN.2~3~OFF
(Serial-No.~Input~Character)

Starting nea task, arg : input~11.01.239.0014~IN.2~3~OFF , pid : 1125
get interface name searching for : 11.01.239.0014
name found globalcontrol
Input settet , name : globalcontrol.IN.2 , value : OFF
No parameter
input ready
Event group found Testeventgruppe
Condition : INP globalcontrol.IN.2 EQ "OFF";
get input, name : globalcontrol.IN.2
no input parameter
returned input data : OFF
compare between A : OFF and B : OFF
(Comparison of input and event)

compare positive
(Comparison is positive)

Condition true
Commands : MSG LIB Test1.test TO globalcontrol.RS232.1;
returned library parameter : 14400:8:N:1
returned library data : Hallo%0D%0A
(Hallo CR LF)

destination : globalcontrol
(Destination)

parameter : 14400:8:N:1
(Parameter)

data : Hallo%0D%0A
(Data)

Build in modul !!!
Sending message to RS232 interface nb : 1
(Destination Output RS232 Ending 1)

Parameters : baudrate 14400 , databits 8
stopbits 1 , parity N
Saving parameter : 14400:8:N:1:
New parameters : 14400:8:N:1
Sending data : Hallo%0D%0A
...OK

If the condition is not correct, the following output is displayed:

input message : input~11.01.239.0014~IN.2~2~ON
Arg : input~11.01.239.0014~IN.2~2~ON
Starting nea task, arg : input~11.01.239.0014~IN.2~2~ON , pid : 2903
get interface name searching for : 11.01.239.0014
name found globalcontrol
Input settet , name : globalcontrol.IN.2 , value : ON
No parameter
input ready

Event group found Testeventgruppe
Condition : INP globalcontrol.IN.2 EQ "OFF";
get input, name : globalcontrol.IN.2
no input parameter
returned input data : ON
compare between A : ON and B : OFF
(Comparison of input and event)
compare negative
(Comparison is negative)

Condition not true

Ifconfig

The network configuration can be displayed by means of the ifconfig command, as well as the IP address. Log into the system using “root” and enter ifconfig. The information provided by the network now appears.

```
# ifconfig

eth0    Link encap:Ethernet  HWaddr 00:1F:E5:00:22:AE
        inet addr:192.168.1.201  Bcast:192.168.1.255
Mask:255.255.255.0
        inet6 addr: fe80::21f:e5ff:fe00:22ae/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST  MTU:1500
Metric:1
        RX packets:31777 errors:9 dropped:0 overruns:0 frame:0
        TX packets:12366 errors:9 dropped:0 overruns:0 carrier:9
        collisions:0 txqueuelen:1000
        RX bytes:6152454 (5.8 MiB)  TX bytes:2112825 (2.0 MiB)
        Interrupt:25 Base address:0x1800

lo      Link encap:Local Loopback
        inet addr:127.0.0.1  Mask:255.0.0.0
        inet6 addr: ::1/128 Scope:Host
        UP LOOPBACK RUNNING  MTU:16436  Metric:1
        RX packets:8 errors:0 dropped:0 overruns:0 frame:0
        TX packets:8 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:0
        RX bytes:463 (463.0 B)  TX bytes:463 (463.0 B)
```

C 8.2.1 Analogue offset setting

As you are directly accessing the operating system, incorrect entries can cause serious damage to the system! Make sure that you enter the exact wording of the command listed here!

The command for changing the offset is:

echo X.X > /usr/system/adc.

X.X is a number with a decimal point with optional preceding symbol.

Examples:

echo 2 > /usr/system/adc	Offset of + 2°C
echo -2.0 > /usr/system/adc	Offset of – 2.0°C
echo +9.9 > /usr/system/adc	Offset of +9.9°C

If no preceding symbol is shown, the submitted value is treated as positive. The decimal point is must be input as a period!
After changing the offset, the system must be rebooted. The *reboot* command re-starts the system.

In order to submit an entry to the GlobalControl, the *root* command must first be transferred before logging into the system (see C 8.2 Serviceport).

C 8.3 Parameter

Parameters must be stored in the *Parameters* field in the library. These are generally used to store addresses, constants or auxiliary variables.

Some parameters can also be stored directly in *Commands*. These are then added in square brackets, separated with a period, behind the output to be sent.

Beispiel:

MSG “TEST“ TO globalcontrol.GSM.[+49160123456789];
MSG “TEST“ TO globalcontrol.EMAIL.[max.mustermann@tls-gmbh.com];
MSG “TEST“ TO globalcontrol.TCPIP.[192.168.1.200:3300];
MSG “TEST“ TO globalcontrol.SDCARD.[file.txt];

No further parameters can be attached to the *Commands* for a message to a **serial interface**.

Outputs **OUT**, **SOUT** and **IR** basically have no parameters. The bus connector **KNX** requires no parameters.

When outputting to a file on the **SD card**, the file name can only be inserted in *Commands* as a parameter.

Inputs **IN** and **SIN** can only be assigned to parameters in the library.

Parameters basically cannot exist in *Conditions*. A comparison of input data including parameters must be performed by means of the library.

C 8.3.1 Parameter for IN and SIN

3 parameters can be assigned for inputs IN and SIN:

The parameters are: **Cycle time:Debounce time:Function.**

These must be separated by a colon and placed in the field *Parameters* in the library (the data field thus remains empty).

If no parameters are set, the defaults are then used for processing (10:10:S).

Cycle time:
This is the time between the continuously incoming input commands (in the Continues function setting).

Debounce time:
This is the time which must pass before an input impulse is actually processed.

Function:
With the function set to *Single*, a flank impulse for the relevant input is only further processed once.

With the function set to *Continuous*, continuous input impulses are sent, as long as an input signal is present.

The time between the individual impulses can be altered using cycle time. The times must be entered in 10ms increments: (100 means 100 * 10ms = 1000ms = 1s).

The maximum input value is 255 (255 * 10ms = 2550ms).

Example:

100:50:C Cycle time: 1s; Debounce time: 500ms; *Continuous*

10:20:S Cycle time: 100ms Debounce time: 200ms; *Single*

Should input 1 contain other parameters, for example, this setting can be made using the following event (the altered parameter can be found in the Input.boot library):

INP globalcontrol.boot EQ “ON“;
MSG LIB Input.boot TO globalcontrol.IN.1;

C 8.3.2 Parameter for EMAIL

The parameter for sending a message via EMAIL is always the e-mail address.

This can be a parameter in the library as well as an attached parameter in the *Commands*.

C 8.3.3 Parameter for GSM

The parameters for the receipt and sending of SMS messages should logically be placed in the library. Here, the incoming data and the relevant parameters can then be compared.

If no parameters are specified, only the message should ever be compared. The sender is not relevant in this case.

For GSM, the parameter is the telephone number of the senders or recipient.

Example:

+49160123456789 (country code +49 for Germany)
INP globalcontrol.GSM EQ SMS.message1; (no parameter possible)
MSG “TEST“ TO globalcontrol.GSM.[+49160123456789];

C 8.3.4 Parameter for RS232

The parameters for communication via a serial RS232 interface can only be placed in the library. If no parameters are present there, the default values are used. The default parameters are 9600:8:N:1.

The parameters of the RS232 interface consist of 4 values, which must all be separated from each other by a colon:

Speed:Data bits:Parity bit:Stop bits

The following settings are possible for the individual values:

Speed: 4800, 9600, 19200, 38400, 57600, 115200

Data bits: 8

Parity bit: N, O, E (none, odd, even)

Stop bits: 1, 2

A parity bit is used for primitive error checking. For even parity, this bit is set to *1* if there is an odd number of ones in the data bits and to *0* if there is an even number of ones.

For odd parity, this bit is inverted to even parity. For no parity, this bit is missing.

In order to receive data from an RS232 input, the interface must first be configured with the appropriate parameters.

A boot event can be set up for this purpose, which is performed once on start-up and thus configures the interface.

Example:

```
INP globalcontrol.BOOT EQ “ON“;
MSG INIT TLS.boot TO globalcontrol.RS232.1;
```

The INIT command only sends the parameters from the appropriate library to the interface. The data is thus not taken into consideration in this case.

C 8.3.5 Parameter for TCPIP & PJLINK & UDP

The parameters for a TCPIP or PJLINK connection can be placed in *Library* or directly in the send command.

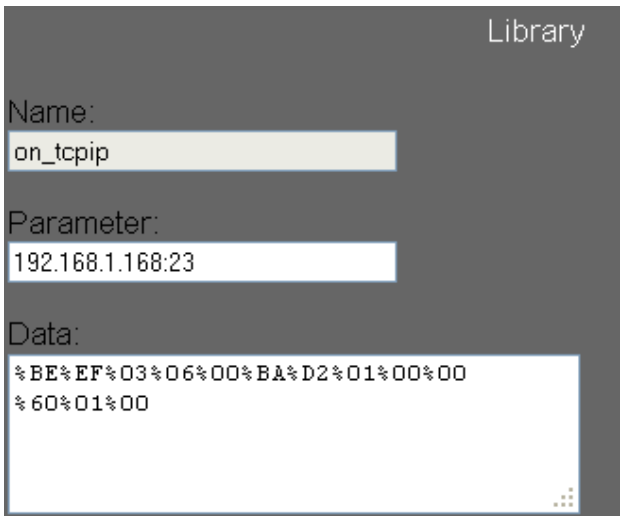
The parameters consist of the IP address of the corresponding device and the port address. The port address supported by the end-device can be found in the device's user manual. If the parameters must be placed in the MSG command, they must be placed in square brackets.

Example with parameter in the MSG command:

MSG LIB pjlink.on TO globalcontrol.PJLINK.[192.168.1.168:4352];
MSG LIB UDP.workshop TO globalcontrol.UDP;

Example with parameter in the library:

Sketch 42



MSG LIB hitachi.on_tcpip TO globalcontrol.TCPIP;

C 8.4 Data

C 8.4.1 RS232

When entering data for the RS232 interface, the individual characters must not be entered separated by spaces. Entries must always use **ASCII characters**.

If characters must be entered in HEX format, these must be marked with preceding percentage symbols. The 2 digits following the percentage symbol are interpreted as HEX. The following digits should then once again be input in ASCII characters.

A line feed (abbrev. **LF**) should be entered as %0A and a carriage return (abbrev. **CR**) as %0D (both in HEX format).

If special characters must be sent via the RS232 interface, these can be sent in hexa-decimal format. Each character should be preceded by a percentage symbol.

An ASCII character set is listed below, together with their hexa-decimal values.

Table of ASCII character set

Scan-code	ASCII hex	ASCII dez	Zeichen	Scan-code	ASCII hex	ASCII dez	Zch.	Scan-code	ASCII hex	ASCII dez	Zch.	Scan-code	ASCII hex	ASCII dez	Zch.
	00	0	NUL ^@		20	32	SP		40	64	@	0D	60	96	`
	01	1	SOH ^A	02	21	33	!	1E	41	65	A	1E	61	97	a
	02	2	STX ^B	03	22	34	"	30	42	66	B	30	62	98	b
	03	3	ETX ^C	29	23	35	#	2E	43	67	C	2E	63	99	c
	04	4	EOT ^D	05	24	36	$	20	44	68	D	20	64	100	d
	05	5	ENQ ^E	06	25	37	%	12	45	69	E	12	65	101	e
	06	6	ACK ^F	07	26	38	&	21	46	70	F	21	66	102	f
	07	7	BEL ^G	0D	27	39	'	22	47	71	G	22	67	103	g
0E	08	8	BS ^H	09	28	40	(	23	48	72	H	23	68	104	h
0F	09	9	TAB ^I	0A	29	41	)	17	49	73	I	17	69	105	i
	0A	10	LF ^J	1B	2A	42	*	24	4A	74	J	24	6A	106	j
	0B	11	VT ^K	1B	2B	43	+	25	4B	75	K	25	6B	107	k
	0C	12	FF ^L	33	2C	44	,	26	4C	76	L	26	6C	108	l
1C	0D	13	CR ^M	35	2D	45	-	32	4D	77	M	32	6D	109	m
	0E	14	SO ^N	34	2E	46	.	31	4E	78	N	31	6E	110	n
	0F	15	SI ^O	08	2F	47	/	18	4F	79	O	18	6F	111	o
	10	16	DLE ^P	0B	30	48	0	19	50	80	P	19	70	112	p
	11	17	DC1 ^Q	02	31	49	1	10	51	81	Q	10	71	113	q
	12	18	DC2 ^R	03	32	50	2	13	52	82	R	13	72	114	r
	13	19	DC3 ^S	04	33	51	3	1F	53	83	S	1F	73	115	s
	14	20	DC4 ^T	05	34	52	4	14	54	84	T	14	74	116	t
	15	21	NAK ^U	06	35	53	5	16	55	85	U	16	75	117	u
	16	22	SYN ^V	07	36	54	6	2F	56	86	V	2F	76	118	v
	17	23	ETB ^W	08	37	55	7	11	57	87	W	11	77	119	w
	18	24	CAN ^X	09	38	56	8	2D	58	88	X	2D	78	120	x
	19	25	EM ^Y	0A	39	57	9	2C	59	89	Y	2C	79	121	y
	1A	26	SUB ^Z	34	3A	58	:	15	5A	90	Z	15	7A	122	z
01	1B	27	Esc ^[	33	3B	59	;		5B	91	[		7B	123	{
	1C	28	FS ^\	2B	3C	60	<		5C	92	\		7C	124	|
	1D	29	GS ^]	0B	3D	61	=		5D	93	]		7D	125	}
	1E	30	RS ^^	2B	3E	62	>	29	5E	94	^		7E	126	~
	1F	31	US ^_	0C	3F	63	?	35	5F	95	_	53	7F	127	DEL

C 8.4.2 Infrared (IR)

Infrared data can be learned using the IR learner. The learned data can then be copied and inserted in the data field or as a complete library file.

Example:

00ab 013b 0000 0000 0058 0016 0016 0016 002c 0016 0016 0016 0016 002c 0016 002c 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0b5f

C 8.4.3 Text

Data to be sent as normal text should simply be entered in the data field. Note the permitted character set (see C 8.5).

C 8.5 Character set

Special characters are not allowed in names in GlobalControl IP. Only underscores are allowed. Even spaces are not allowed.

Permitted characters:

0 1 2 3 4 5 6 7 8 9
a b c d e f g h i j k l m n o p q r s t u v w x y z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
_

The following additional characters are allowed in the information lines and as text data:

( ) [ ] : ; . , + - * “ % < > = @

Space character

No other characters are allowed!

C 8.6 Naming conventions

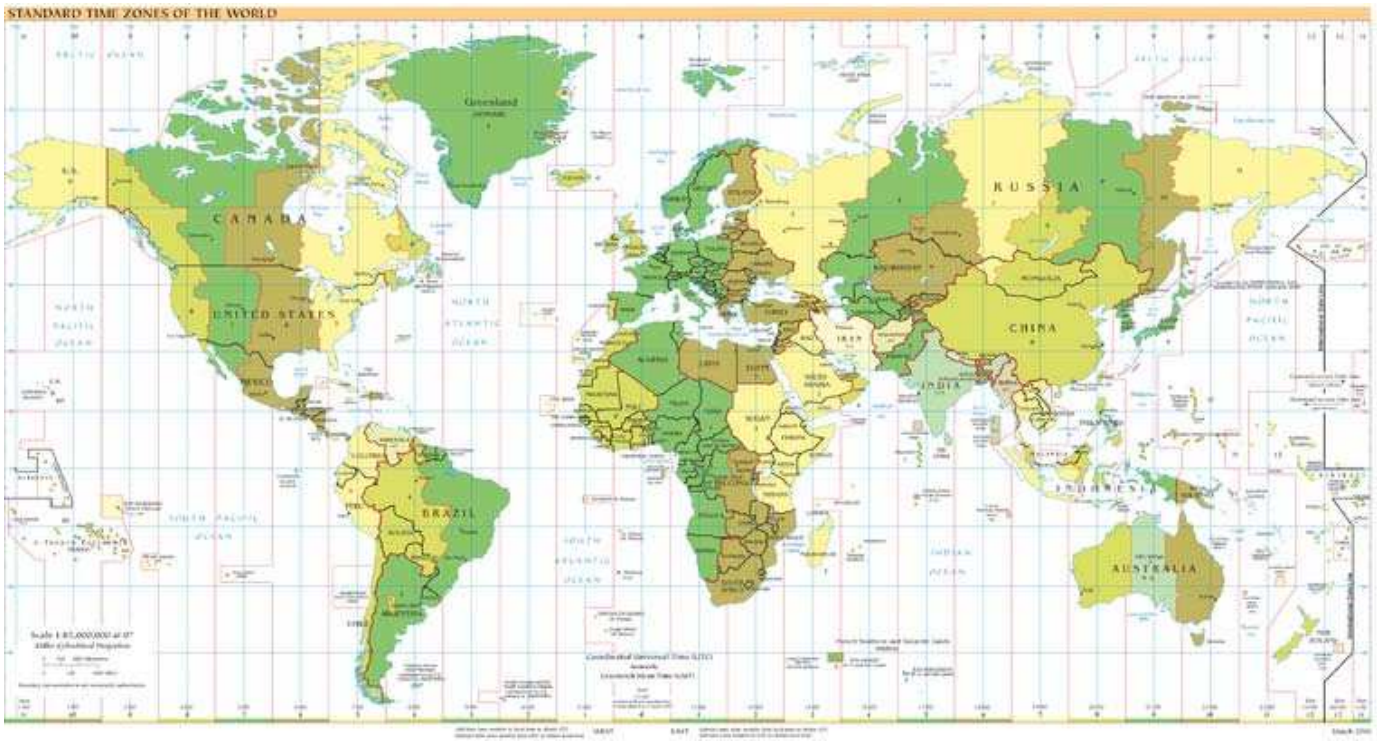
Naming conventions are agreements which establish a specific system for assigning names to variables or constants, thus enabling conclusions to be immediately drawn about their intended purpose.

Some conventions:

- Do not use names which are only differentiated by their use of upper and lower case.
- The name should start with a letter
- The name should convey the importance of the variable
- The name should also be understandable to others
- The name should still be understandable after a period of years
- The name should be as short as possible.

C 8.7 Time zones

Sketch 43



The time zone can look very different, depending on the location of the **GlobalControl IP**.
Take for example **MEZ-1CEST,M3.5.0/2,M10.5.0/3** – the format of the entry is explained below:

MEZ Name of the standard time (*Central European Time CET*), when summer time is not applicable (can consist of 3 or more letters)

-1 Meridian Offset in hours = negative means 1 hour east from Greenwich.

(The offset gives the value which must be added to local time in order to obtain coordinated universal time (*CET* or *GMT*). This is therefore positive for areas west of the Greenwich meridian and negative for areas to the east. Format: hh:mm:ss

CEST Designation when summer time is applicable (if this is omitted, summer time is not applicable). Here: Central European Summer Time.

M3.5.0 Start of summer time

Mm.w.d: the day d (0<=d<=6) 0 is Sunday
the week w (1<=w<=5) in which the day d is
the month m (1<=m<=12)

M3.5.0 thus means day 0 = Sunday in the last week of the third month, March

/2 The local time at which the transition occurs (in this case 2 am).

M10.5.0 End of summer time

Mm.w.d: the day d (0<=d<=6) 0 is Sunday
the week w (1<=w<=5) in which the day d is
the month m (1<=m<=12)

M10.5.0 means last Sunday in October

/3 The local time at which the transition occurs (in this case 3 Uhr).

Examples:

For Great Britain. (no time difference, with summer time).

CET,BST, M3.4.0/1; M10.5.0/1

For Moscow (Russia). (4 hours time difference, no summer time).

MEZ-4

For Beijing (China). (8 hours time difference, no summer time).

CST-8

For St Johns (USA) 3.30 hours behind CUT; summer time starts on the second Sunday in March and ends on the first Sunday in November, Transition 1 minute after midnight

NST03:30NDT,M3.2.0/00.01,M11.1.0/00.01

C 9 N.N.

C 10 Options

C 11 Care, maintenance, disposal, support

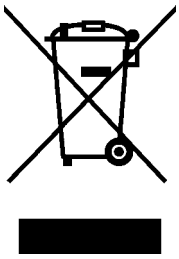
C 11.1 Cleaning

Use a dry, soft cloth to clean TLS products; never use chemicals.

C 11.2 Disposal

If you want to discard your TLS device, dispose of the product in acc. with current regulations. Contact your municipal collection point.

Manufacturer:
TLS Communication GmbH
Marie-Curie-Straße 20
40721 Hilden
WEEE Nr. 69124746



C 11.3 Support

For questions arising when operating the device or when in use, please contact your local TLS dealer or TLS directly:

TLS Communication GmbH
Marie-Curie-Straße 20
D-40721 Hilden
Tel.: +49 (0) 2103 5006-0
Fax: +49 (0) 2103 5006-90
E-Mail: info@tls-gmbh.com
www.tls-gmbh.com

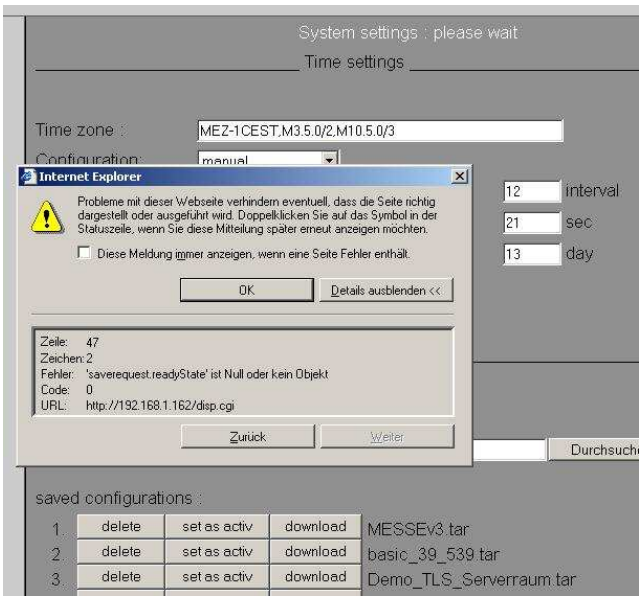
C 12 FAQ

I am having problems uploading or 'setting as active' a configuration.

Please try different browsers in this case and use the appropriate current version.

Note that when trying to set the configuration to **active** with *Internet Explorer*, an error message appears, which has however no impact on functionality and thus has no effect on the **activation** of the configuration. In this case, the message **please wait** remains displayed on screen, but disappears once the page is refreshed.

Sketch 44

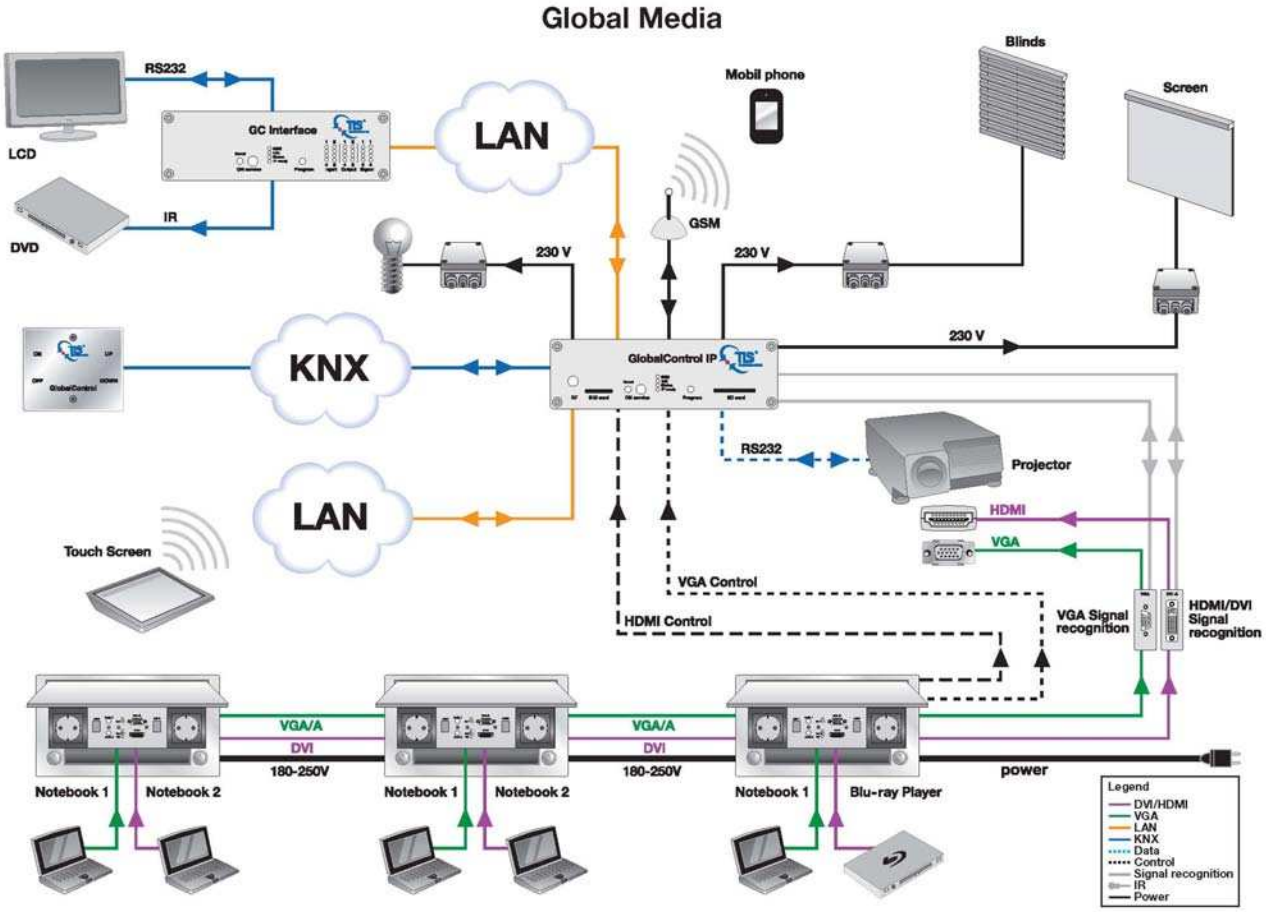


Is it possible to log in *at the same time* as an Admin and User on *a single* PC?

No, this is not possible on *a single* PC, as a PC normally only has o*ne* IP address.

It is however possible to log in simultaneously as an Admin and User with *two* PCs, i.e. with *two different* IP addresses.

C 13 Wiring diagram and other diagrams



C 14 Glossary

SIM: Subscriber Identity Module

SMA: Sub Miniatur A

RF: Radio frequency

SD: Secure Digital

IP: Internet Protocol

LED: Light emitting diode

GSM: Global System for Mobile Communications

IR: Infrared

HEX: Hexadecimal

MAC: Media-Access-Control

SMTP: Simple Mail Transfer Protocol

POP3: Post Office Protocol Version 3

CET: Central European Time

UTC: Coordinated Universal Time

GMT: Greenwich Mean Time

CEST: Central European Summer Time

RTC: Real time clock

CR: carriage return

LF: line feed

TCPIP: Transmission Control Protocol / Internet Protocol

RS232: Recommended Standard 232

SMS: Short Message Service

EMAIL: Electronical Mail

WWW: world wide web

KNX: (fieldbus for building automation)

PC: Personal Computer

USB: Universal Serial Bus

LAN: Local Area Network

ESD: electro-static discharge

ms: Milliseconds 1/1000 Seconds

DNS: Domain Name System

TLS Produktprogramm

- Mobile Beschallungsanlagen
- Computer-Trainings-Systeme
- Sprachtrainingssysteme
- Übertragungstechnik
- Spezialkabel

TLS Product range

- Portable Sound Systems
- Computer Training Systems
- Language Training Systems
- Transmission Technology
- Special Cables

Visit our website:

www.tls-gmbh.com

This product complies with the European directives and standards, provided that it is installed, maintained and used as described in the installation provisions and the operating instructions. Technical data may be changed without prior notice.